

DIGITAL TRANSISTOR

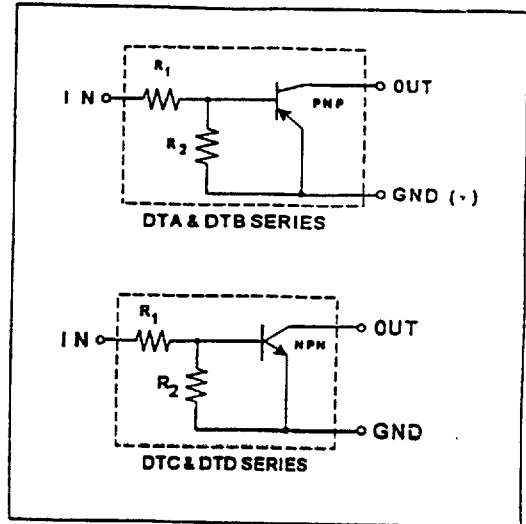
APPLICATION:

- Inverter, Driver & Interface Circuits

FEATURES:

- Replaces up to three parts (1 transistor & 2 resistors) with one part
- Available in a variety of surface mount or leaded (thru-hole) packages
- High packing density requires less board space
- Cost savings due to fewer components to purchase & stock & handle
- Improved reliability due to reduced number of components
- Available in PNP & NPN polarities
- Available in 100 mA & 500 mA devices
- Decreased parasitic effects
- Double diffused silicon, Epitaxial Planar Transistor with thin film internal bias resistors

EQUIVALENT CIRCUITS:



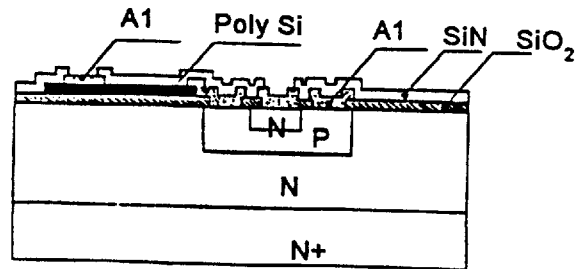
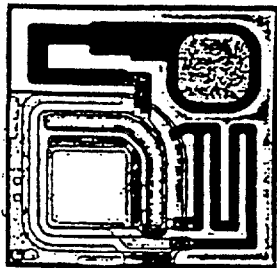
MAXIMUM RATINGS:

| PARAMETER | PNP | | NPN | | UNITS |
|-----------------------------------|-------------------------------------|-------------|-------------|-------------|-------|
| | DTA | DTB | DTC | DTD | |
| Power Supply Voltage (V_{cc}) | 50 | 50 | 50 | 50 | Volts |
| Collector Current (I_c) | 100 | 500 | 100 | 500 | mA |
| Junction Temperature (T_j) | +125 | +125 | +125 | +125 | °C |
| Storage Temperature (T_{stg}) | -55 to +125 | -55 to +125 | -55 to +125 | -55 to +125 | °C |
| Power Dissipation (P_d) | Rated by Package -- See Table Below | | | | mW |

MAXIMUM POWER DISSIPATION BY PACKAGE: P_d (mW)

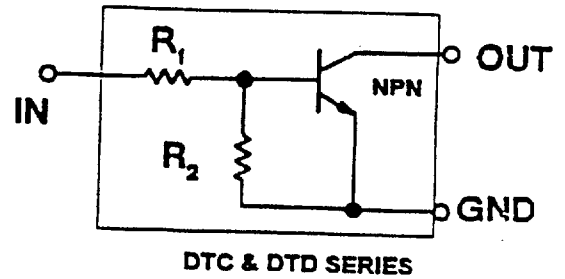
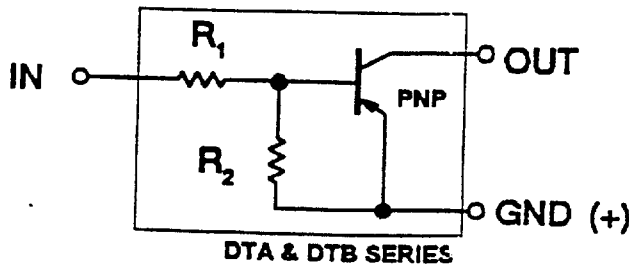
| Test Condition | SURFACE MOUNT DEVICES | | | | THRU-HOLE (LEADED) DEVICES | | | | |
|-------------------|-----------------------|----------------|-----|-----|----------------------------|-----|-----|-----|-----|
| | SST (SOT-23) | SMT (SC-59) | UMT | EM3 | SPT (TO-92S) | ATR | ATV | FTR | FTL |
| Free Air/PCB | 200 | 200 | 200 | 150 | 300 | 300 | 300 | 300 | 300 |
| Ceramic Substrate | 350 | 350 | 350 | 250 | — | — | — | — | — |

DIGITAL TRANSISTOR CONSTRUCTION:



7828999 0014555 SOT

• Digital Transistor Summary Table



| Resistor Values | | PNP $I_c(\text{Max}) = 100 \text{ mA}$ 2N3908 | PNP $I_c(\text{Max}) = 600 \text{ mA}$ PN2907A/2N4403 | NPN $I_c(\text{Max}) = 100 \text{ mA}$ 2N3904 | NPN $I_c(\text{Max}) = 500 \text{ mA}$ PN2222A/2N4401 |
|--------------------------------------|-----------------------------------|---|---|---|---|
| R_1 | R_2 | | | | |
| 1/K 1/K 1/K | 1K NONE 10K | - DTA 113T DTA 113Z | DTB 113E - DTB 113Z | - - DTC 113Z | DTD 113E - DTD 113Z |
| 10K 0 10K 10K 10K | 10K 10K NONE 4.7K 47K | DTA 114E DTA 114G DTA 114T DTA 114W DTA 114Y/DTA 214Y | DTB 114E - DTB 114T - - | DTC 114E DTC 114G DTC 114T/DTC 314T * DTC 114W DTC 114Y | DTD 114E DTD 114G DTD 114T - - |
| 100K 0 100K 100K | 100K 100K NONE 10K | DTA 115E DTA 115G DTA 115T DTA 115U | - - - - | DTC 115E DTC 115G DTC 115T DTC 115U | - - - - |
| .22K | 4.7K | - | DTB 122J | - | DTD 122J |
| 2.2K 2.2K 2.2K 2.2K | 2.2K NONE 47K 10K | DTA 123E - DTA 123J DTA 123Y | DTB 123E DTB 123T - DTB 123Y | DTC 123E DTC 323T * DTC 123J DTC 123Y | DTD 123E DTD 123T - DTD 123Y |
| 2.7K | 1K | DTA 1D3R | - | DTC 1D3R | - |
| 22K 0 22K 22K 22K | 22K 22K NONE 47K | DTA 124E DTA 124G DTA 124T DTA 124X | - - - - | DTC 124E DTC 124G DTC 124T DTC 124X | - - - - |
| 220K | NONE | DTA 125T | - | DTC 125T | - |
| 3.3K | 10K | - | DTB 133H | - | DTD 133H |
| 4.7K 4.7K 4.7K 4.7K 4.7K | 4.7K NONE 10K 22K 47K | DTA 143E DTA 143T DTA 143X DTA 143Y DTA 143Z | DTB 143E DTB 143T - - - | DTC 143E DTC 143T/DTC 343T * DTC 143X DTC 143Y DTC 143Z | DTD 143E DTD 143T - - - |
| 47K 0 47K 47K 47K | 47K 47K NONE 10K 22K | DTA 144E DTA 144G DTA 144T DTA 144V DTA 144W | - - - - - | DTC 144E DTC 144G DTC 144T DTC 144V DTC 144W | - - - - - |
| 6.8K 6.8K | 6.8K NONE | - - | - DTB 163T | DTC 363E * DTC 363T * | - DTD 163T |

* $I_c = 600 \text{ mA}$

NOTE: See "How to Order" for complete part number

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7828999 0014556 446

DIGITAL TRANSISTOR: PNP

ELECTRICAL CHARACTERISTICS: 100 mA Series

| PART NUMBER | Vin(off) | | | Vin(on) | | | Vo(on) | | | Ib | | Ic(OFF) | | | Vce(SAT) | | | Cob @ F=1MHz | | | CUT-OFF FREQ | | | | |
|-------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|---------|---------|--------------|----------|----------|--------------|---------|----------|---------|---------|
| | Max (V) | Vce (V) | Ic (mA) | Min (V) | Vce (V) | Ic (mA) | TYP (V) | Max (V) | Ic (mA) | Ib (mA) | Max (mA) | Vin (V) | Max (uA) | Voc (V) | Vin (V) | Max (V) | Ic (mA) | Ib (mA) | TYP (pF) | Max (pF) | Vcb (V) | Ie (mA) | fT (MHz) | Vce (V) | Ic (mA) |
| DTA113Z | 0.3 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 7.2 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA114E | 0.5 | 5 | 0.1 | 3 | 0.3 | 10 | 0.1 | 0.3 | 10 | 0.5 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA114W | 0.8 | 5 | 0.1 | 3 | 0.3 | 2 | 0.1 | 0.3 | 10 | 0.5 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA114Y | 0.3 | 5 | 0.1 | 1.4 | 0.3 | 1 | 0.1 | 0.3 | 5 | 0.25 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA115E | 0.5 | 5 | 0.1 | 3 | 0.3 | 1 | 0.1 | 0.3 | 5 | 0.25 | 0.15 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA115U | 3.3 | 5 | 0.1 | 1.5 | 0.3 | 1 | 0.1 | 0.3 | 7 | 0.2 | 0.1 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA123E | 0.5 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 3.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA123J | 0.5 | 5 | 0.1 | 1.1 | 0.3 | 5 | 0.1 | 0.3 | 5 | 0.25 | 3.6 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA123Y | 0.3 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 3.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA124E | 0.5 | 5 | 0.1 | 3 | 0.2 | 5 | 0.1 | 0.3 | 10 | 0.5 | 0.36 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA124X | 0.4 | 5 | 0.1 | 2.5 | 0.3 | 2 | 0.1 | 0.3 | 10 | 0.5 | 0.36 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA143E | 0.5 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 1.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA143X | 0.3 | 5 | 0.1 | 2.5 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 1.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA143Y | 0.3 | 5 | 0.1 | 3 | 0.3 | 10 | 0.1 | 0.3 | 10 | 0.5 | 1.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA143Z | 0.5 | 5 | 0.1 | 1.3 | 0.3 | 5 | 0.1 | 0.3 | 5 | 0.25 | 1.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA144E | 0.5 | 5 | 0.1 | 3 | 0.3 | 2 | 0.1 | 0.3 | 10 | 0.5 | 0.18 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA144V | 0.5 | 5 | 0.1 | 6 | 0.3 | 2 | 0.1 | 0.3 | 10 | 0.5 | 0.18 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA144W | 0.8 | 5 | 0.1 | 4 | 0.3 | 2 | 0.1 | 0.3 | 10 | 0.5 | 0.18 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA214Y | 0.3 | 5 | 0.1 | 1.4 | 0.3 | 1 | 0.1 | 0.3 | 50 | 2.5 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA1D3R | 1.5 | 5 | 0.1 | 4 | 0.3 | 5 | 0.1 | 0.3 | 10 | 1 | 3.7 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |

| PART NUMBER | Vin(off) | | | Vin(on) | | | Vo(on) | | | Ib | | Ic(OFF) | | | Vce(SAT) | | | Cob @ F=1MHz | | | CUT-OFF FREQ | | | | |
|-------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|---------|---------|--------------|----------|----------|--------------|---------|----------|---------|---------|
| | Max (V) | Vce (V) | Ic (mA) | Min (V) | Vce (V) | Ic (uA) | TYP (V) | Max (V) | Ic (mA) | Ib (mA) | Max (mA) | Vin (V) | Max (uA) | Voc (V) | Vin (V) | Max (V) | Ic (mA) | Ib (mA) | TYP (pF) | Max (pF) | Vcb (V) | Ie (mA) | fT (MHz) | Vce (V) | Ic (mA) |
| DTA143T | 0.3 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 7.2 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA114T | 0.5 | 5 | 0.1 | 3 | 0.3 | 10 | 0.1 | 0.3 | 10 | 0.5 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 10 | 1 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA124T | 0.8 | 5 | 0.1 | 3 | 0.3 | 2 | 0.1 | 0.3 | 5 | 0.25 | 1.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.5 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA144T | 0.3 | 5 | 0.1 | 1.4 | 0.3 | 1 | 0.1 | 0.3 | 5 | 0.25 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.5 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA115T | 0.5 | 5 | 0.1 | 3 | 0.3 | 1 | 0.1 | 0.3 | 5 | 0.25 | 0.15 | 5 | 10 | 30 | 0 | 0.3 | 1 | 0.1 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA125T | 0.8 | 5 | 0.1 | 3 | 0.3 | 1 | 0.1 | 0.3 | 5 | 0.25 | 0.33 | 5 | 10 | 30 | 0 | 0.3 | 0.5 | 0.05 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA113T | 0.5 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 3.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.2 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |

| PART NUMBER | Vin(off) | | | Vin(on) | | | Vo(on) | | | Ib | | Ic(OFF) | | | Vce(SAT) | | | Cob @ F=1MHz | | | CUT-OFF FREQ | | | | |
|-------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|---------|---------|--------------|----------|----------|--------------|---------|----------|---------|---------|
| | Max (V) | Vce (V) | Ic (mA) | Min (V) | Vce (V) | Ic (uA) | TYP (V) | Max (V) | Ic (mA) | Ib (mA) | Max (mA) | Vin (V) | Max (uA) | Voc (V) | Vin (V) | Max (V) | Ic (mA) | Ib (mA) | TYP (pF) | Max (pF) | Vcb (V) | Ie (mA) | fT (MHz) | Vce (V) | Ic (mA) |
| DTA114G | 0.3 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 7.2 | 5 | 10 | 30 | 0 | 0.3 | 10 | 0.5 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA124G | 0.5 | 5 | 0.1 | 3 | 0.3 | 10 | 0.1 | 0.3 | 10 | 0.5 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 10 | 0.5 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA144G | 0.8 | 5 | 0.1 | 3 | 0.3 | 2 | 0.1 | 0.3 | 5 | 0.25 | 1.8 | 5 | 10 | 30 | 0 | 0.3 | 10 | 0.5 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTA115G | 0.3 | 5 | 0.1 | 1.4 | 0.3 | 1 | 0.1 | 0.3 | 5 | 0.25 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 10 | 0.25 | 3 | 6 | 10 | 0 | 250 | 10 | 5 |
| DTB114G | 0.3 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 7.2 | 5 | 10 | 30 | 0 | 0.3 | 50 | 2.5 | 3 | 6 | 10 | 0 | 200 | 10 | 5 |

ELECTRICAL CHARACTERISTICS: 500 mA Series

| PART NUMBER | Vin(off) | | | Vin(on) | | | Vo(on) | | | Ib | | Ic(OFF) | | | Vce(SAT) | | | Cob @ F=1MHz | | | CUT-OFF FREQ | | | | |
|-------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|---------|---------|--------------|----------|----------|--------------|---------|----------|---------|---------|
| | Max (V) | Vce (V) | Ic (mA) | Min (V) | Vce (V) | Ic (uA) | TYP (V) | Max (V) | Ic (mA) | Ib (mA) | Max (mA) | Vin (V) | Max (uA) | Voc (V) | Vin (V) | Max (V) | Ic (mA) | Ib (mA) | TYP (pF) | Max (pF) | Vcb (V) | Ie (mA) | fT (MHz) | Vce (V) | Ic (mA) |
| DTB113E | 0.5 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 50 | 2.5 | 7.2 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 50 |
| DTB113Z | 0.3 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 50 | 2.5 | 7.2 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 50 |
| DTB114E | 0.5 | 5 | 0.1 | 3 | 0.3 | 10 | 0.1 | 0.3 | 50 | 2.5 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 50 |
| DTB123E | 0.5 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 50 | 2.5 | 3.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 50 |
| DTB143E | 0.5 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 50 | 2.5 | 1.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 50 |
| DTB123Y | 0.3 | 5 | 0.1 | 2 | 0.3 | 20 | 0.1 | 0.3 | 50 | 2.5 | 3.6 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 50 |
| DTB122J | 0.3 | 5 | 0.1 | 2 | 0.3 | 30 | 0.1 | 0.3 | 50 | 2.5 | 4.5 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 50 |
| DTB133H | 0.3 | 5 | 0.1 | 2 | 0.3 | 20 | 0.1 | 0.3 | 50 | 2.5 | 2.4 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 50 |

| PART NUMBER | Vin(off) | | | Vin(on) | | | Vo(on) | | | Ib | | Ic(OFF) | | | Vce(SAT) | | | Cob @ F=1MHz | | | CUT-OFF FREQ | | | | |
|-------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|---------|---------|--------------|----------|----------|--------------|---------|----------|---------|---------|
| | Max (V) | Vce (V) | Ic (mA) | Min (V) | Vce (V) | Ic (uA) | TYP (V) | Max (V) | Ic (mA) | Ib (mA) | Max (mA) | Vin (V) | Max (uA) | Voc (V) | Vin (V) | Max (V) | Ic (mA) | Ib (mA) | TYP (pF) | Max (pF) | Vcb (V) | Ie (mA) | fT (MHz) | Vce (V) | Ic (mA) |
| DTB123T | 0.3 | 5 | 0.1 | 3 | 0.3 | 20 | 0.1 | 0.3 | 10 | 0.5 | 7.2 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 5 |
| DTB143T | 0.5 | 5 | 0.1 | 3 | 0.3 | 10 | 0.1 | 0.3 | 10 | 0.5 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 5 |
| DTB163T | 0.8 | 5 | 0.1 | 3 | 0.3 | 2 | 0.1 | 0.3 | 5 | 0.25 | 1.8 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 5 |
| DTB114T | 0.3 | 5 | 0.1 | 1.4 | 0.3 | 1 | 0.1 | 0.3 | 5 | 0.25 | 0.88 | 5 | 10 | 30 | 0 | 0.3 | 5 | 0.25 | 3 | 6 | 10 | 0 | 200 | 10 | 5 |

DIGITAL TRANSISTOR: PNP

ELECTRICAL CHARACTERISTICS: 100 mA Series

| PART NUMBER | TYP | RESISTOR VALUE | | R2/R1 | | | Ic Max (mA) | INPUT VOLT | | hFE | | | Icbo | | Icbo | | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT |
|-------------|-----|----------------|--------|-------|------|------|-------------|------------|---------|-----|---------|---------|----------|---------|----------|---------|-----------|----------|--------------------|
| | | R1 (K) | R2 (K) | Min | Typ | Max | | Min (V) | Max (V) | Min | Vce (V) | Ic (mA) | Max (uA) | Vcb (V) | Max (uA) | Vce (V) | | | |
| DTA113Z | PNP | 1.0 | 10.0 | 8 | 10 | 12 | 100 | -10 | 5 | 33 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | E11/111 | A776 | |
| DTA114E | PNP | 10.0 | 10.0 | 0.8 | 1 | 1.2 | 100 | -40 | 10 | 30 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 14 | A768 | |
| DTA114W | PNP | 10.0 | 4.7 | 0.37 | 0.47 | 0.57 | 100 | -30 | 10 | 24 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | 74 | A778 | |
| DTA114Y | PNP | 10.0 | 47.0 | 3.7 | 4.7 | 5.7 | 100 | -40 | 8 | 68 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 54 | A762 | |
| DTA115E* | PNP | 100.0 | 100.0 | 0.8 | 1 | 1.2 | 100 | -40 | 10 | 82 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 19 | B861 | |
| DTA115U | PNP | 100.0 | 10.0 | 0.08 | 0.1 | 0.12 | 100 | -40 | 10 | 27 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | E79/179 | B865 | |
| DTA123E | PNP | 2.2 | 2.2 | 0.8 | 1 | 1.2 | 100 | -12 | 10 | 20 | 5 | 20 | 0.5 | 50 | 0.5 | 50 | 12 | A733 | |
| DTA123J | PNP | 2.2 | 47.0 | 1.7 | 2.1 | 2.6 | 100 | -12 | 5 | 80 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | E32/132 | A774 | |
| DTA123Y | PNP | 2.2 | 10.0 | 3.8 | 4.5 | 5.5 | 100 | -12 | 5 | 33 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | 52 | A777 | |
| DTA124E | PNP | 22.0 | 22.0 | 0.8 | 1 | 1.2 | 100 | -40 | 10 | 56 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 15 | A761 | |
| DTA124X | PNP | 22.0 | 47.0 | 1.7 | 2.1 | 2.6 | 100 | -40 | 10 | 68 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 35 | A770 | |
| DTA143E | PNP | 4.7 | 4.7 | 0.8 | 1 | 1.2 | 100 | -30 | 10 | 20 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | 13 | A768 | |
| DTA143X | PNP | 4.7 | 10.0 | 1.7 | 2.1 | 2.6 | 100 | -20 | 7 | 30 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | 33 | A769 | |
| DTA143Y | PNP | 4.7 | 22.0 | 3.7 | 4.7 | 5.7 | 100 | -30 | 8 | 56 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 53 | A785 | |
| DTA143Z | PNP | 4.7 | 47.0 | 8 | 10 | 12 | 100 | -30 | 5 | 80 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | E13/113 | A775 | |
| DTA144E | PNP | 7.0 | 47.0 | 0.8 | 1 | 1.2 | 100 | -40 | 15 | 68 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 16 | A782 | |
| DTA144V | PNP | 7.0 | 10.0 | 0.17 | 0.21 | 0.26 | 100 | | | 33 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | E56/156 | A774 | |
| DTA144W | PNP | 47.0 | 22.0 | 0.37 | 0.47 | 0.57 | 100 | -40 | 10 | 56 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 76 | A767 | |
| DTA214Y | PNP | 10 | 47 | 3.7 | 4.7 | 5.7 | 100 | -40 | 6 | 68 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | N14 | A762 | |
| DTA1D3R | PNP | 2.7 | 1.0 | 0.33 | 0.37 | 0.41 | 100 | -15 | 15 | 20 | 5 | 30 | 0.5 | 50 | 0.5 | 50 | K3B | A784 | |

| PART NUMBER | TYP | RESISTOR VALUE | | Vcbo Max (V) | Vceo Max (V) | Vebo Max (V) | Ic Max (mA) | hFE | | | Icbo Max (uA) | Vcb (V) | Icbo Max (uA) | Vce (V) | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT |
|-------------|-----|----------------|--------|--------------|--------------|--------------|-------------|-----|-----|-----|---------------|---------|---------------|---------|-----------|----------|--------------------|
| | | R1 (K) | R2 (K) | | | | | Min | Typ | Max | | | | | | | |
| DTA143T | PNP | 4.7 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 93 | A764 | |
| DTA114T | PNP | 10.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 94 | A765 | |
| DTA124T | PNP | 22.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 95 | A771 | |
| DTA144T | PNP | 47.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 96 | A772 | |
| DTA115T | PNP | 100.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 9A | B863 | |
| DTA125T | PNP | 200.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 9A | B863 | |
| DTA113T | PNP | 1.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 91 | A786 | |

| PART NUMBER | TYP | RESISTOR VALUE | | Vcbo Max (V) | Vceo Max (V) | Vebo Max (V) | Ic Max (mA) | hFE | | | Icbo Max (uA) | Vcb (V) | Icbo Max (uA) | Vce (V) | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT | | |
|-------------|-----|----------------|--------|--------------|--------------|--------------|-------------|-----|-----|-----|---------------|---------|---------------|---------|-----------|----------|--------------------|------|--|
| | | R1 (K) | R2 (K) | | | | | Min | Typ | Max | | | | | | | | | |
| DTA114G | PNP | 0 | 10.0 | 50 | 50 | 5 | 100 | 30 | - | - | 5 | 5 | 0.5 | 50 | 580 | 4 | K14 | A780 | |
| DTA124G | PNP | 0 | 22.0 | 50 | 50 | 5 | 100 | 56 | - | - | 5 | 5 | 0.5 | 50 | 260 | 4 | K15 | A781 | |
| DTA144G | PNP | 0 | 47.0 | 50 | 50 | 5 | 100 | 68 | - | - | 5 | 5 | 0.5 | 50 | 130 | 4 | K16 | A782 | |
| DTA115G | PNP | 0 | 100.0 | 50 | 50 | 5 | 100 | 82 | - | - | 5 | 5 | 0.5 | 50 | 58 | 4 | K19 | B862 | |
| DTB114G | PNP | 0 | 10.0 | 50 | 50 | 5 | 500 | 58 | - | - | 5 | 100 | 0.5 | 50 | 0.5 | 4 | L14 | B726 | |

ELECTRICAL CHARACTERISTICS: 500 mA Series

| PART NUMBER | TYP | RESISTOR VALUE | | Vcbo Max (V) | Vceo Max (V) | Vebo Max (V) | Ic Max (mA) | hFE | | | Icbo Max (uA) | Vcb (V) | Icbo Max (uA) | Vce (V) | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT |
|-------------|-----|----------------|--------|--------------|--------------|--------------|-------------|-----|-----|-----|---------------|---------|---------------|---------|-----------|----------|--------------------|
| | | R1 (K) | R2 (K) | | | | | Min | Typ | Max | | | | | | | |
| DTB113E | PNP | 1.0 | 1.0 | 0.8 | 1 | 1.2 | 500 | -10 | 10 | 33 | 5 | 50 | 0.5 | 50 | F11 | B717 | |
| DTB113Z | PNP | 1.0 | 10.0 | 8 | 10 | 12 | 500 | -10 | 5 | 56 | 5 | 50 | 0.5 | 50 | G11 | B718 | |
| DTB114E | PNP | 10.0 | 10.0 | 0.8 | 1 | 1.2 | 500 | -40 | 10 | 56 | 5 | 50 | 0.5 | 50 | F14 | B714 | |
| DTB123E | PNP | 2.2 | 2.2 | 0.8 | 1 | 1.2 | 500 | -12 | 10 | 39 | 5 | 50 | 0.5 | 50 | F12 | B712 | |
| DTB143E | PNP | 4.7 | 4.7 | 0.8 | 1 | 1.2 | 500 | -30 | 10 | 47 | 5 | 50 | 0.5 | 50 | F13 | B713 | |
| DTB123Y | PNP | 2.2 | 10.0 | 3.8 | 4.5 | 5.5 | 500 | -12 | 5 | 56 | 5 | 50 | 0.5 | 50 | F52 | B715 | |
| DTB122J | PNP | 0.22 | 4.7 | 17.1 | 21.3 | 25.6 | 500 | -5 | 5 | 47 | 5 | 50 | 0.5 | 50 | G3C | B725 | |
| DTB133H | PNP | 3.3 | 10.0 | 2.4 | 3 | 3.7 | 500 | -20 | 8 | 56 | 5 | 50 | 0.5 | 50 | G98 | B719 | |

| PART NUMBER | TYP | RESISTOR VALUE | | Vcbo Max (V) | Vceo Max (V) | Vebo Max (V) | Ic Max (mA) | hFE | | | Icbo Max (uA) | Vcb (V) | Icbo Max (uA) | Vce (V) | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT | |
|-------------|-----|----------------|--------|--------------|--------------|--------------|-------------|-----|-----|-----|---------------|---------|---------------|---------|-----------|----------|--------------------|--|
| | | R1 (K) | R2 (K) | | | | | Min | Typ | Max | | | | | | | | |
| DTB123T | PNP | 2.2 | NONE | 50 | 50 | 5 | 500 | 100 | 250 | 600 | 5 | 50 | 0.5 | 50 | 4 | E92 | B723 | |
| DTB143T | PNP | 4.7 | NONE | 50 | 50 | 5 | 500 | 100 | 250 | 600 | 5 | 50 | 0.5 | 50 | 4 | F03 | B720 | |
| DTB163T | PNP | 6.8 | NONE | 50 | 50 | 5 | 500 | 100 | 250 | 600 | 5 | 50 | 0.5 | 50 | 4 | E97 | B721 | |
| DTB114T | PNP | 10.0 | NONE | 50 | 50 | 5 | 500 | 100 | 250 | 600 | 5 | 50 | 0.5 | 50 | 4 | E94 | B722 | |

DIGITAL TRANSISTOR: NPN
ELECTRICAL CHARACTERISTICS: 100 mA Series

Table with 23 columns: PART NUMBER, Vin(off) (Max, Vce, Ic), Vin(on) (Min, Vce, Ic), Vo(on) (TYP, Max, Ic, Ib), Ib (Max, Vin), Ic(OFF) (Max, Vce, Vin), Vce(SAT) (Max, Ic, Ib), Cob @ F=1MHz (TYP, Max, Vcb, Ie), CUT-OFF FREQ (ft, Vce, Ic). Rows include DTC113Z, DTC114E, DTC114W, DTC114Y, DTC115E, DTC115U, DTC123E, DTC123J, DTC123Y, DTC124E, DTC124X, DTC143E, DTC143X, DTC143Y, DTC143Z, DTC144E, DTC144V, DTC144W, DTC214Y, DTC1D3R.

Table with 23 columns: PART NUMBER, Vin(off) (Max, Vce, Ic), Vin(on) (Min, Vce, Ic), Vo(on) (TYP, Max, Ic, Ib), Ib (Max, Vin), Ic(OFF) (Max, Vce, Vin), Vce(SAT) (Max, Ic, Ib), Cob @ F=1MHz (TYP, Max, Vcb, Ie), CUT-OFF FREQ (ft, Vce, Ic). Rows include DTC143T, DTC114T, DTC124T, DTC144T, DTC115T, DTC125T, DTC113T.

Table with 23 columns: PART NUMBER, Vin(off) (Max, Vce, Ic), Vin(on) (Min, Vce, Ic), Vo(on) (TYP, Max, Ic, Ib), Ib (Max, Vin), Ic(OFF) (Max, Vce, Vin), Vce(SAT) (Max, Ic, Ib), Cob @ F=1MHz (TYP, Max, Vcb, Ie), CUT-OFF FREQ (ft, Vce, Ic). Rows include DTC114G, DTC124G, DTC144G, DTC115G, DTD114G.

ELECTRICAL CHARACTERISTICS: 500 mA Series

Table with 23 columns: PART NUMBER, Vin(off) (Max, Vce, Ic), Vin(on) (Min, Vce, Ic), Vo(on) (TYP, Max, Ic, Ib), Ib (Max, Vin), Ic(OFF) (Max, Vce, Vin), Vce(SAT) (Max, Ic, Ib), Cob @ F=1MHz (TYP, Max, Vcb, Ie), CUT-OFF FREQ (ft, Vce, Ic). Rows include DTD113E, DTD113Z, DTD114E, DTD123E, DTD143E, DTD123Y, DTD122J, DTD133H.

Table with 23 columns: PART NUMBER, Vin(off) (Max, Vce, Ic), Vin(on) (Min, Vce, Ic), Vo(on) (TYP, Max, Ic, Ib), Ib (Max, Vin), Ic(OFF) (Max, Vce, Vin), Vce(SAT) (Max, Ic, Ib), Cob @ F=1MHz (TYP, Max, Vcb, Ie), CUT-OFF FREQ (ft, Vce, Ic). Rows include DTD123T, DTD143T, DTD163T, DTD114T.

DIGITAL TRANSISTOR: NPN
ELECTRICAL CHARACTERISTICS: 100 mA Series

| PART NUMBER | TYP | RESISTOR VALUE | | R2/R1 | | | Ic Max (mA) | INPUT VOLT | | hFE | | Icbo | | Icso | | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT | |
|-------------|-----|----------------|--------|-------|------|------|-------------|------------|-----|-----|---------|---------|-----|---------|-----|-----------|----------|--------------------|---------|
| | | R1 (K) | R2 (K) | Min | Typ | Max | | Min | Max | Min | Vce (V) | Ic (mA) | Max | Vcb (V) | Max | | | | Vce (V) |
| DTC113Z | NPN | 1.0 | 10.0 | 8 | 10 | 12 | 100 | -10 | 5 | 33 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | E12/121 | C776 | |
| DTC114E | NPN | 10.0 | 10.0 | 0.8 | 1 | 1.2 | 100 | -40 | 10 | 30 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 24 | C768 | |
| DTC114W | NPN | 10.0 | 4.7 | 0.37 | 0.47 | 0.57 | 100 | -30 | 10 | 24 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | 84 | C778 | |
| DTC114Y | NPN | 10.0 | 47.0 | 3.7 | 4.7 | 5.7 | 100 | -40 | 6 | 68 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 64 | C762 | |
| DTC115E | NPN | 100.0 | 100.0 | 0.8 | 1 | 1.2 | 100 | -40 | 10 | 82 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 29 | D861 | |
| DTC115U | NPN | 100.0 | 10.0 | 0.08 | 0.1 | 0.12 | 100 | -40 | 10 | 27 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | E89/189 | D865 | |
| DTC123E | NPN | 2.2 | 2.2 | 0.8 | 1 | 1.2 | 100 | -12 | 10 | 20 | 5 | 20 | 0.5 | 50 | 0.5 | 50 | 22 | C733 | |
| DTC123J | NPN | 2.2 | 47.0 | 17 | 21 | 26 | 100 | -12 | 5 | 80 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | E42/142 | C774 | |
| DTC123Y | NPN | 2.2 | 10.0 | 3.6 | 4.5 | 5.5 | 100 | -12 | 5 | 33 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | 62 | C777 | |
| DTC124E | NPN | 22.0 | 22.0 | 0.8 | 1 | 1.2 | 100 | -40 | 10 | 56 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 25 | C761 | |
| DTC124X | NPN | 22.0 | 47.0 | 1.7 | 2.1 | 2.6 | 100 | -40 | 10 | 68 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 45 | C770 | |
| DTC143E | NPN | 4.7 | 4.7 | 0.8 | 1 | 1.2 | 100 | -30 | 10 | 20 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | 23 | C768 | |
| DTC143X | NPN | 4.7 | 10.0 | 1.7 | 2.1 | 2.6 | 100 | -20 | 7 | 30 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | 43 | C769 | |
| DTC143Y | NPN | 4.7 | 22.0 | 3.7 | 4.7 | 5.7 | 100 | -30 | 6 | 56 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 63 | C785 | |
| DTC143Z | NPN | 4.7 | 47.0 | 8 | 10 | 12 | 100 | -30 | 5 | 80 | 5 | 10 | 0.5 | 50 | 0.5 | 50 | E23/123 | C775 | |
| DTC144E | NPN | 47.0 | 47.0 | 0.8 | 1 | 1.2 | 100 | -40 | 15 | 68 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 26 | C782 | |
| DTC144V | NPN | 47.0 | 10.0 | 0.17 | 0.21 | 0.26 | 100 | - | - | 33 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | E66/166 | C774 | |
| DTC144W | NPN | 47.0 | 22.0 | 0.37 | 0.47 | 0.57 | 100 | -40 | 10 | 56 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | 86 | C767 | |
| DTC214Y | NPN | 10 | 47 | 3.7 | 4.7 | 5.7 | 100 | -40 | 6 | 68 | 5 | 5 | 0.5 | 50 | 0.5 | 50 | N24 | C762 | |
| DTC1D3R | NPN | 2.7 | 1.0 | 0.33 | 0.37 | 0.41 | 100 | -15 | 15 | 20 | 5 | 30 | 0.5 | 50 | 0.5 | 50 | K4B | C784 | |

| PART NUMBER | TYP | RESISTOR VALUE | | Vcbo Max (V) | Vceo Max (V) | Vebo Max (V) | Ic Max (mA) | hFE | | Icbo | | Icso | | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT | | | |
|-------------|-----|----------------|--------|--------------|--------------|--------------|-------------|-----|-----|------|---------|---------|-----|-----------|----------|--------------------|---------|------|---------|
| | | R1 (K) | R2 (K) | | | | | Min | Typ | Max | Vce (V) | Ic (mA) | Max | | | | Vcb (V) | Max | Veb (V) |
| DTC143T | NPN | 4.7 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 0.5 | 4 | 3 | C764 | |
| DTC114T | NPN | 10.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 0.5 | 4 | 4 | C785 | |
| DTC124T | NPN | 22.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 0.5 | 4 | 5 | C771 | |
| DTC144T | NPN | 47.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 0.5 | 4 | 6 | C772 | |
| DTC115T | NPN | 100.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 0.5 | 4 | 9 | D864 | |
| DTC125T | NPN | 200.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 0.5 | 4 | 0A | D863 | |
| DTC113T | NPN | 1.0 | NONE | 50 | 50 | 5 | 100 | 100 | 250 | 600 | 5 | 1 | 0.5 | 50 | 0.5 | 4 | 1 | C786 | |

| PART NUMBER | TYP | RESISTOR VALUE | | Vcbo Max (V) | Vceo Max (V) | Vebo Max (V) | Ic Max (mA) | hFE | | Icbo | | Icso | | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT | | | |
|-------------|-----|----------------|--------|--------------|--------------|--------------|-------------|-----|-----|------|---------|---------|-----|-----------|----------|--------------------|---------|------|---------|
| | | R1 (K) | R2 (K) | | | | | Min | Typ | Max | Vce (V) | Ic (mA) | Max | | | | Vcb (V) | Max | Veb (V) |
| DTC114G | NPN | 0 | 10.0 | 50 | 50 | 5 | 100 | 30 | - | - | 5 | 5 | 0.5 | 50 | 580 | 4 | K24 | C780 | |
| DTC124G | NPN | 0 | 22.0 | 50 | 50 | 5 | 100 | 56 | - | - | 5 | 5 | 0.5 | 50 | 260 | 4 | K25 | C781 | |
| DTC144G | NPN | 0 | 47.0 | 50 | 50 | 5 | 100 | 68 | - | - | 5 | 5 | 0.5 | 50 | 130 | 4 | K26 | C782 | |
| DTC115G | NPN | 0 | 100.0 | 50 | 50 | 5 | 100 | 82 | - | - | 5 | 5 | 0.5 | 50 | 58 | 4 | K29 | D862 | |
| DTD114G | NPN | 0 | 10.0 | 50 | 50 | 5 | 500 | 56 | - | - | 5 | 100 | 0.5 | 50 | 0.5 | 4 | L24 | D726 | |

ELECTRICAL CHARACTERISTICS: 500 mA Series

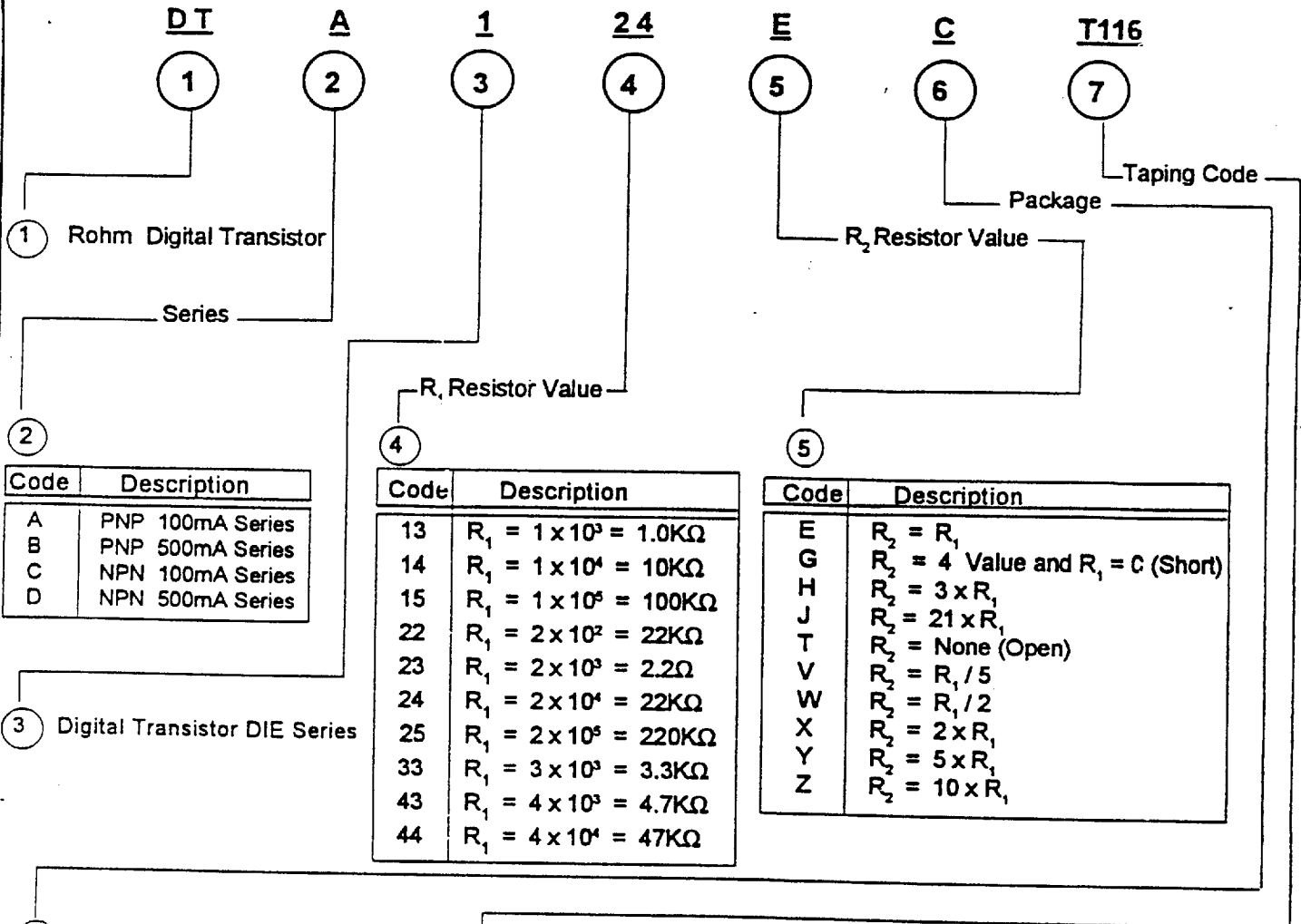
| PART NUMBER | TYP | RESISTOR VALUE | | Vcbo Max (V) | Vceo Max (V) | Vebo Max (V) | Ic Max (mA) | INPUT VOLT | | hFE | | Icbo | | Icso | | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT | |
|-------------|-----|----------------|--------|--------------|--------------|--------------|-------------|------------|-----|-----|-----|------|-----|---------|---------|-----------|----------|--------------------|-----|
| | | R1 (K) | R2 (K) | | | | | Min | Typ | Max | Min | Max | Min | Vce (V) | Ic (mA) | | | | Max |
| DTD113E | NPN | 1.0 | 1.0 | 0.8 | 1 | 1.2 | 500 | -10 | 10 | 33 | 5 | 50 | 0.5 | 50 | 0.5 | 50 | F21 | D717 | |
| DTD113Z | NPN | 1.0 | 10.0 | 8 | 10 | 12 | 500 | -10 | 5 | 56 | 5 | 50 | 0.5 | 50 | 0.5 | 50 | G21 | D718 | |
| DTD114E | NPN | 10.0 | 10.0 | 0.8 | 1 | 1.2 | 500 | -40 | 10 | 56 | 5 | 50 | 0.5 | 50 | 0.5 | 50 | F24 | D714 | |
| DTD123E | NPN | 2.2 | 2.2 | 0.8 | 1 | 1.2 | 500 | -12 | 10 | 39 | 5 | 50 | 0.5 | 50 | 0.5 | 50 | F22 | D712 | |
| DTD143E | NPN | 4.7 | 4.7 | 0.8 | 1 | 1.2 | 500 | -30 | 10 | 47 | 5 | 50 | 0.5 | 50 | 0.5 | 50 | F23 | D713 | |
| DTD123Y | NPN | 2.2 | 10.0 | 3.6 | 4.5 | 5.5 | 500 | -12 | 5 | 56 | 5 | 50 | 0.5 | 50 | 0.5 | 50 | F62 | D715 | |
| DTD122J | NPN | 0.22 | 4.7 | 17.1 | 21.3 | 25.6 | 500 | -5 | 5 | 47 | 5 | 50 | 0.5 | 50 | 0.5 | 50 | G4C | D725 | |
| DTD133H | NPN | 3.3 | 10.0 | 2.4 | 3 | 3.7 | 500 | -20 | 6 | 56 | 5 | 50 | 0.5 | 50 | 0.5 | 50 | G06 | D719 | |

| PART NUMBER | TYP | RESISTOR VALUE | | Vcbo Max (V) | Vceo Max (V) | Vebo Max (V) | Ic Max (mA) | hFE | | Icbo | | Icso | | PART MARK | DIE TYPE | EQUIVALENT CIRCUIT | | | |
|-------------|-----|----------------|--------|--------------|--------------|--------------|-------------|-----|-----|------|---------|---------|-----|-----------|----------|--------------------|---------|------|---------|
| | | R1 (K) | R2 (K) | | | | | Min | Typ | Max | Vce (V) | Ic (mA) | Max | | | | Vcb (V) | Max | Veb (V) |
| DTD123T | NPN | 2.2 | NONE | 50 | 50 | 5 | 500 | 100 | 250 | 600 | 5 | 50 | 0.5 | 50 | 0.5 | 4 | E02 | D723 | |
| DTD143T | NPN | 4.7 | NONE | 50 | 50 | 5 | 500 | 100 | 250 | 600 | 5 | 50 | 0.5 | 50 | 0.5 | 4 | F13 | D720 | |
| DTD163T | NPN | 6.8 | NONE | 50 | 50 | 5 | 500 | 100 | 250 | 600 | 5 | 50 | 0.5 | 50 | 0.5 | 4 | E07 | D721 | |
| DTD114T | NPN | 10.0 | NONE | 50 | 50 | 5 | 500 | 100 | 250 | 600 | 5 | 50 | 0.5 | 50 | 0.5 | 4 | E04 | D722 | |

6

• Digital Transistors

HOW TO ORDER:



| Code | Description |
|------|------------------|
| A | PNP 100mA Series |
| B | PNP 500mA Series |
| C | NPN 100mA Series |
| D | NPN 500mA Series |

| Code | Description |
|------|--|
| 13 | R ₁ = 1 × 10 ³ = 1.0KΩ |
| 14 | R ₁ = 1 × 10 ⁴ = 10KΩ |
| 15 | R ₁ = 1 × 10 ⁵ = 100KΩ |
| 22 | R ₁ = 2 × 10 ² = 22KΩ |
| 23 | R ₁ = 2 × 10 ³ = 2.2KΩ |
| 24 | R ₁ = 2 × 10 ⁴ = 22KΩ |
| 25 | R ₁ = 2 × 10 ⁵ = 220KΩ |
| 33 | R ₁ = 3 × 10 ³ = 3.3KΩ |
| 43 | R ₁ = 4 × 10 ³ = 4.7KΩ |
| 44 | R ₁ = 4 × 10 ⁴ = 47KΩ |

| Code | Description |
|------|---|
| E | R ₂ = R ₁ |
| G | R ₂ = 4 Value and R ₁ = C (Short) |
| H | R ₂ = 3 × R ₁ |
| J | R ₂ = 21 × R ₁ |
| T | R ₂ = None (Open) |
| V | R ₂ = R ₁ / 5 |
| W | R ₂ = R ₁ / 2 |
| X | R ₂ = 2 × R ₁ |
| Y | R ₂ = 5 × R ₁ |
| Z | R ₂ = 10 × R ₁ |

| | PKG | DESCRIPTION | TAPING CODE | DESCRIPTION | PKG. QTY. | PACKAGE SIZE |
|----------------|----------------------|-----------------------------|------------------------------|--|--|--|
| | | | | | | |
| SURFACE MOUNT | K | SMT (SC-59/JAPANESE SOT-23) | * T146 | 1 PIN SIDE ON FEED HOLE SIDE | 3,000 | 178mm/7" Reel |
| | | | * T147 | 2 PIN SIDE ON FEED HOLE SIDE | 3,000 | 178mm/7" Reel |
| | | | * T246 | 1 PIN SIDE ON FEED HOLE SIDE | 10,000 | 330mm/13" Reel |
| | C | SST (EUROPEAN SOT-23) | * T116 | 1 PIN SIDE ON FEED HOLE SIDE | 3,000 | 178mm/7" Reel |
| | | | * T117 * T216 | 2 PIN SIDE ON FEED HOLE SIDE 1 PIN SIDE ON FEED HOLE SIDE | 3,000 10,000 | 178mm/7" Reel 330 mm/13" Reel |
| U | UMT (DTA & DTC ONLY) | * T106 | 1 PIN SIDE ON FEED HOLE SIDE | 3,000 | 178 mm/7" Reel | |
| | | T107 | 2 PIN SIDE ON FEED HOLE SIDE | 3,000 | 178 mm/7" Reel | |
| E | EM3 (DTA & DTC ONLY) | * TL | 1 PIN SIDE ON FEED HOLE SIDE | 3,000 | 178 mm/7" Reel | |
| | | TR | 2 PIN SIDE ON FEED HOLE SIDE | 3,000 | 178 mm/7" Reel | |
| LEADED DEVICES | S | SPT (Short TO-92) | * TP NONE | AMMO BOX RADIAL BULK | 5,000 2,000 | W-335/H-135/D-40(mm) Polyethylene Bag |
| | V | ATV | * TV2 | AMMO BOX RADIAL | 2,500 | W-334/H-280/D-41(mm) |
| | | | TV3 | AMMO BOX RADIAL | 2,500 | W-334/H-280/D-41(mm) |
| | L | FTL | * TL2 | AMMO BOX RADIAL | 2,500 | W-334/H-280/D-41(mm) |
| | | | TL3 | AMMO BOX RADIAL | 2,500 | W-334/H-280/D-41(mm) |
| | F | FTR | * NONE C1 | BULK TUBE | 2,000 8,000 | Polyethylene Bag L-565/W-4.2/H-11.5(mm) |
| A | ATR | * NONE C2 | BULK TUBE | 2,000 8,000 | Polyethylene Bag L-565/W-4.2/H-12.6(mm) | |

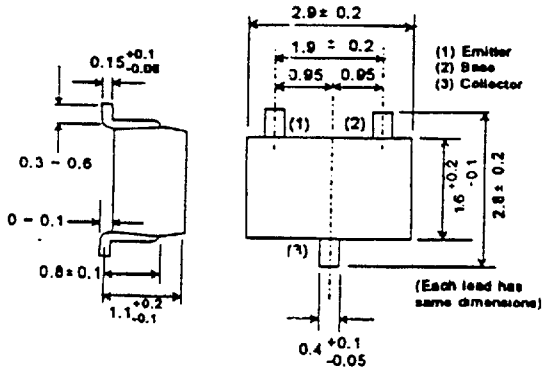
Note: SOT-23, SC-59 and SPT packages are standard products.

* Standard Taping Codes

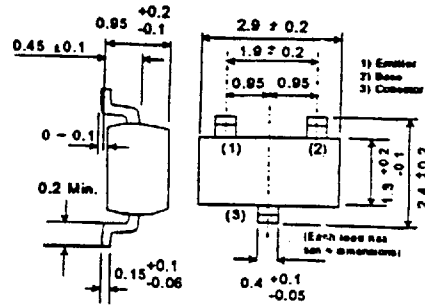
ROHM CORPORATION, Rohm Electronics Division, 3034 Owen Dr., Antioch, TN 37013 (615)641-2020 FAX (615)641-2022

78288700 6669282

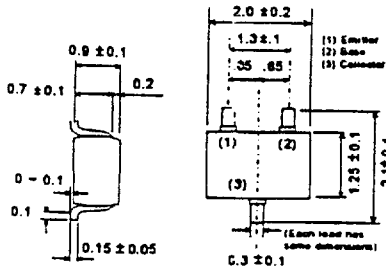
• Surface Mount Packages: Unit (mm)



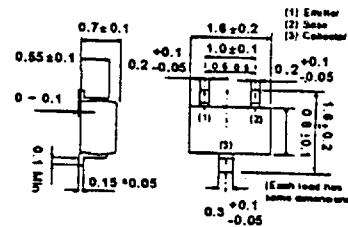
SMT (SC-59/Japanese SOT-23)



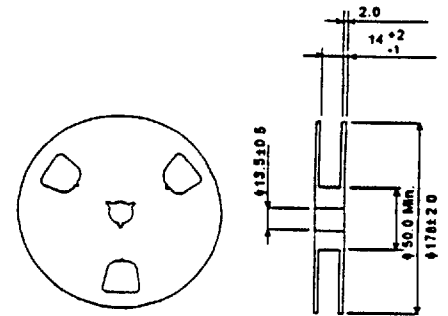
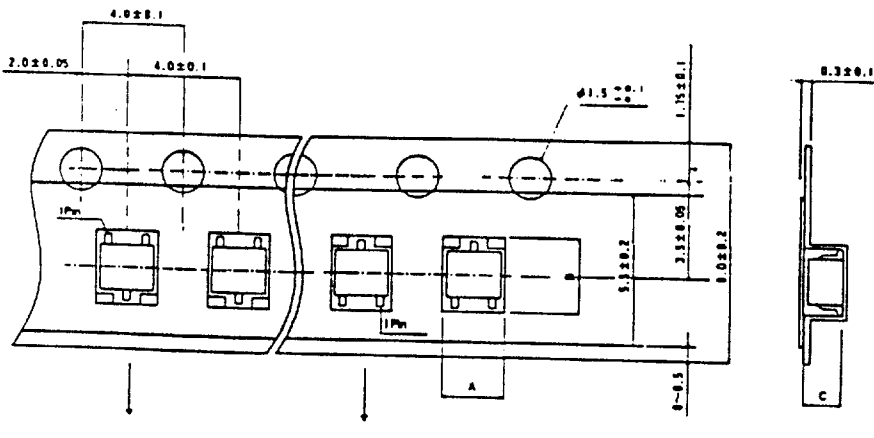
SST (European SOT-23)



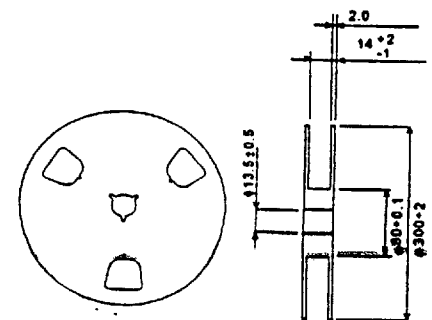
UMT



EM3



178 mm/7" Reel



330 mm/13" Reel

| Package | Code |
|---------|------|
| SMT | T147 |
| SST | T117 |
| UMT | T107 |
| EM3 | TR |

| Package | Code |
|---------|-----------|
| SMT | T146/T246 |
| SST | T116/T216 |
| UMT | T106/T206 |
| EM3 | TL |

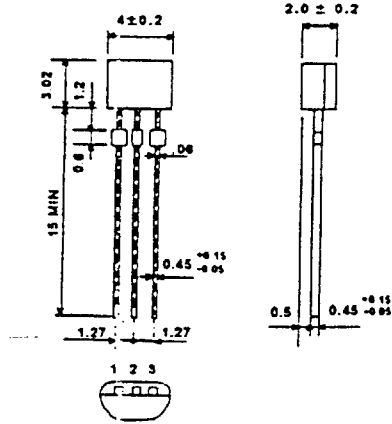
| Package | Size | | |
|---------|-----------|-----------|------------|
| | A | B | C |
| SMT | 3.1 ± 0.2 | 3.2 ± 0.2 | 1.35 ± 0.1 |
| SST | 3.1 ± 0.2 | 2.8 ± 0.2 | 1.25 ± 0.2 |
| UMT | 2.2 ± 0.1 | 2.4 ± 0.1 | 1.15 ± 0.1 |
| EM3 | 1.8 ± 0.1 | 1.8 ± 0.2 | 0.9 ± 0.2 |

Tape and Reel Dimensions

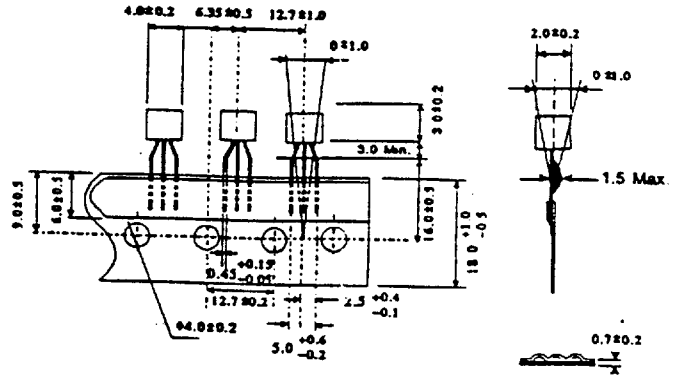
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747 2954100 6668282

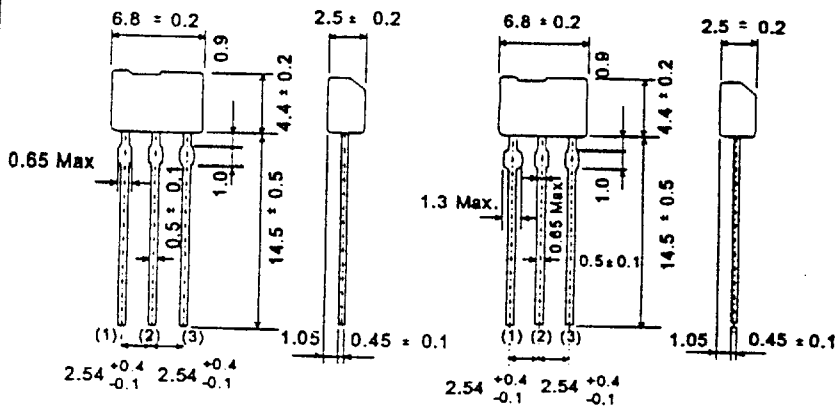
Leaded (thru-hole) Packages



SPT(TO-92S) Package

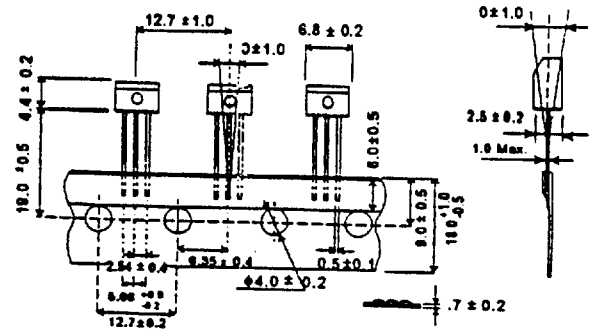


Ammo Box Taping Dimensions

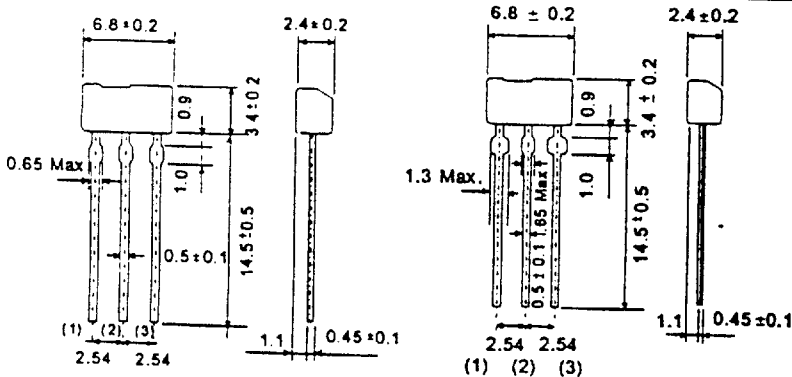


ATV(TV2 Style) Package

ATV(TV3 Style) Package

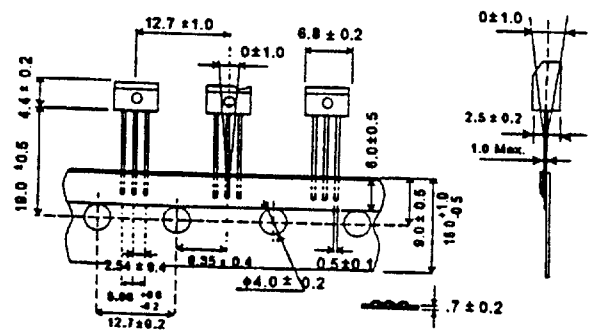


Ammo Box Taping Dimensions

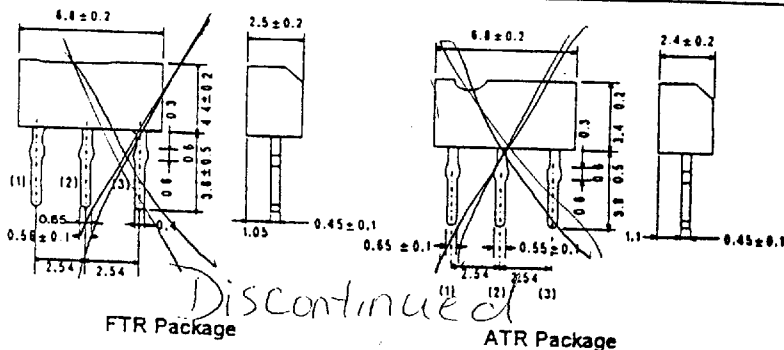


FTL(TL2 Style) Package

FTL(TL3 Style) Package



Ammo Box Taping Dimensions



FTR Package

ATR Package

| PKG. | TAPING CODE | DESCRIPTION | PKG. QTY. |
|-------------|-------------|----------------------------|-----------|
| SPT(TO-92S) | TP | AMMO BOX RADIAL (Standard) | 5,000 |
| | NONE | BULK | 2,000 |
| ATV | TV2 | AMMO BOX RADIAL (Standard) | 2,500 |
| | TV3 | AMMO BOX RADIAL | 2,500 |
| FTL | TL2 | AMMO BOX RADIAL (Standard) | 2,500 |
| | TL3 | AMMO BOX RADIAL | 2,500 |
| FTR | NONE | BULK (Standard) | 2,000 |
| ATR | OT | TUBE | 8,000 |
| | OT | BULK (Standard) | 2,000 |
| ATR | OT | TUBE | 8,000 |
| | OT | BULK (Standard) | 2,000 |

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