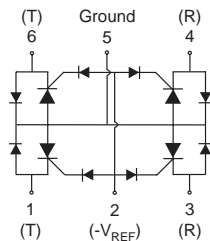


Battrax Quad Negative SLIC Protector



This *Battrax* device is an integrated overvoltage protection solution for SLIC-based (Subscriber Line Interface Circuit) line cards. This six-pin device is constructed using four SCRs and four gate diodes.

The device is referenced to V_{BAT} and conducts when a voltage that is more negative than $-V_{REF}$ is applied to the cathode (pins 1, 3, 4, or 6) of the SCR. During conduction, all negative transients are shorted to Ground. All positive transients are passed to Ground by steering diodes.

For specific diagrams showing these *Battrax* applications, see Figure 3.43.

Electrical Parameters

Part Number *	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} μ Amps	I_{GT} mAmps	I_T Amps	I_H mAmps	C_O pF
B1101U_4 **	$ -V_{REF} + -1.2V $	$ -V_{REF} + -10V $	4	5	100	2.2	100	50
B1161U_4 **	$ -V_{REF} + -1.2V $	$ -V_{REF} + -10V $	4	5	100	2.2	160	50
B1201U_4 **	$ -V_{REF} + -1.2V $	$ -V_{REF} + -10V $	4	5	100	2.2	200	50

* For individual "UA" and "UC" surge ratings, see table below.

** Contact factory for release date.

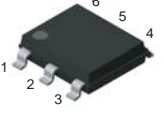
General Notes:

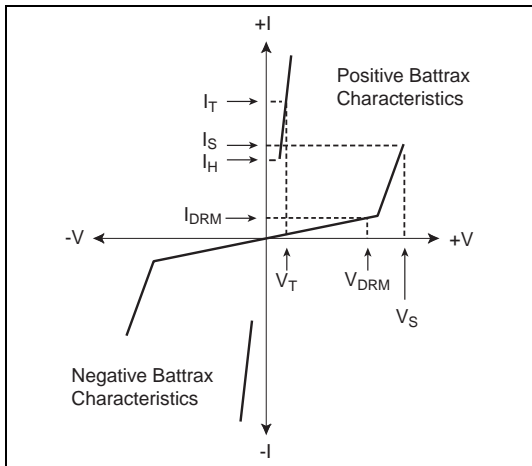
- All measurements are made at an ambient temperature of 25 °C. I_{PP} applies to -40 °C through +85 °C temperature range.
- I_{PP} is a repetitive surge rating and is guaranteed for the life of the product.
- I_{PP} ratings assume a $V_{REF} = \pm 48$ V.
- V_{DRM} is measured at I_{DRM} .
- V_S is measured at 100 V/ μ s.
- Off-state capacitance is measured at 1 MHz with a 2 V bias and is a typical value. "UC" product is approximately 2x the listed value.
- V_{REF} maximum value for the negative Battrax is -200 V.

Surge Ratings

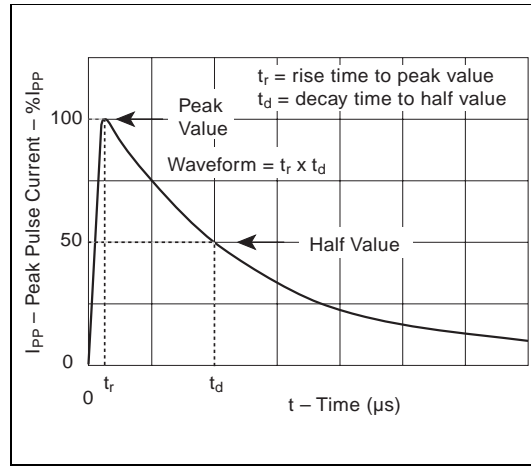
Series	I_{PP} 2x10 μ s Amps	I_{PP} 8x20 μ s Amps	I_{PP} 10x160 μ s Amps	I_{PP} 10x560 μ s Amps	I_{PP} 10x1000 μ s Amps	I_{TSM} 60 Hz Amps	di/dt Amps/ μ s
A	150	150	90	50	45	20	500
C	500	400	200	120	100	50	500

Thermal Considerations

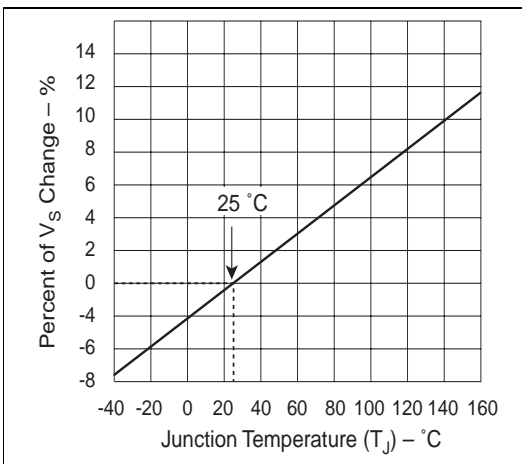
Package	Symbol	Parameter	Value	Unit
	T_J	Operating Junction Temperature Range	-40 to +125	$^{\circ}\text{C}$
	T_S	Storage Temperature Range	-65 to +150	$^{\circ}\text{C}$
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	60	$^{\circ}\text{C/W}$



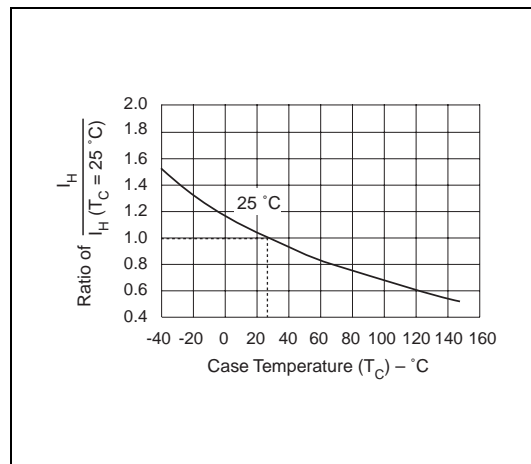
V-I Characteristics



$t_r \times t_d$ Pulse Wave-form



Normalized V_S Change versus Junction Temperature



Normalized DC Holding Current versus Case Temperature