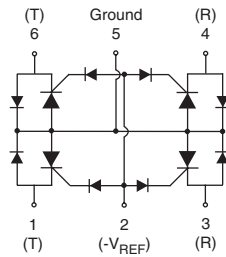


# Batrax® Dual Port Negative SLIC Protector



This *Batrax* 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 the diodes.

For specific diagrams showing these *Batrax* applications, see Figure 6.48 in Section 6, "Reference Designs" of this *Telecom Design Guide*.

SIDACtor Devices

## Electrical Parameters

Part Number *	$V_{DRM}$ Volts	$V_S$ Volts	$V_T$ Volts	$I_{DRM}$ $\mu$ Amps	$I_{GT}$ mAmps	$I_T$ Amps	$I_H$ mAmps
<b>B1101U_4L</b>	$ -V_{REF}  +  -1.2V $	$ -V_{REF}  +  -10V $	4	5	100	2.2	100
<b>B1161U_4L</b>	$ -V_{REF}  +  -1.2V $	$ -V_{REF}  +  -10V $	4	5	100	2.2	160
<b>B1201U_4L</b>	$ -V_{REF}  +  -1.2V $	$ -V_{REF}  +  -10V $	4	5	100	2.2	200

\* "L" in part number indicates RoHS compliance. For non-RoHS compliant device, delete "L" from part number. For individual "UA" and "UC" surge ratings, see table below.

### 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/ $\mu$ s.
- $V_{REF}$  maximum value for the negative *Batrax* is -200 V.

## Surge Ratings in Amps

Series	$I_{PP}$										$I_{TSM}$ 50 / 60 Hz	di/dt
	0.2x310 *	2x10 *	8x20 *	10x160 *	10x560 *	5x320 *	10x360 *	10x1000 *	5x310 *			
	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps		
A	20	150	150	90	50	75	75	45	75	20	500	
C	50	500	400	200	150	200	175	100	200	50	500	

\* Current waveform in  $\mu$ s

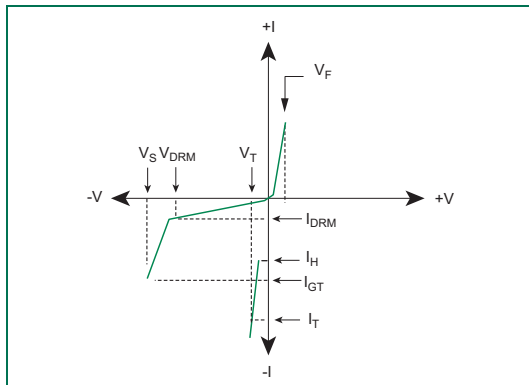
\*\* Voltage waveform in  $\mu$ s

**Thermal Considerations**

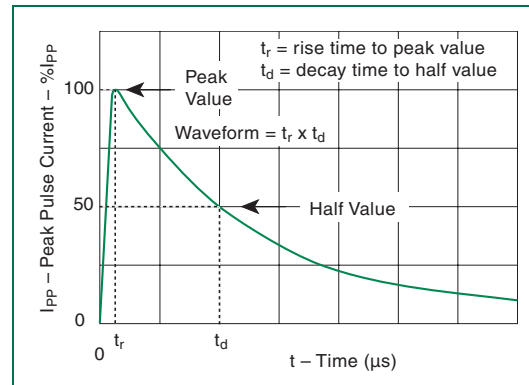
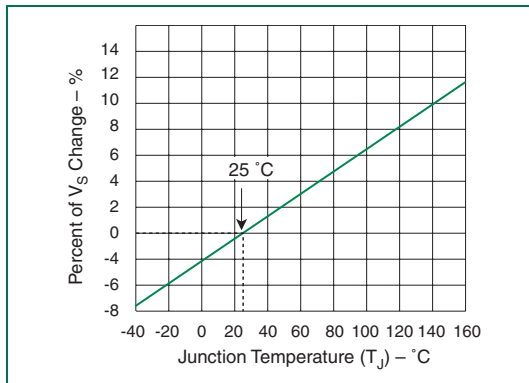
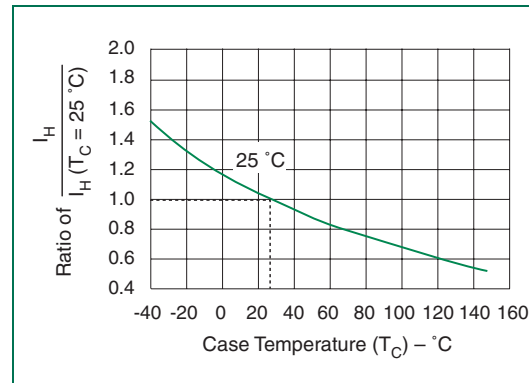
Package	Symbol	Parameter	Value	Unit
Modified MS-013 	$T_J$	Operating Junction Temperature Range	-40 to +125	°C
	$T_S$	Storage Temperature Range	-65 to +150	°C
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	60	°C/W

**Capacitance Values**

Part Number	pF	
	MIN	MAX
B1101UA 4L	50	200
B1101UC 4L	50	200
B1161UA 4L	50	200
B1161UC 4L	50	200
B1201UA 4L	50	200
B1201UC 4L	50	200

 Note: Off-state capacitance ( $C_O$ ) is measured at 1 MHz with a 2 V bias.


V-I Characteristics


 $t_r \times t_d$  Pulse Waveform

 Normalized  $V_S$  Change versus Junction Temperature


Normalized DC Holding Current versus Case Temperature