Littelfuse
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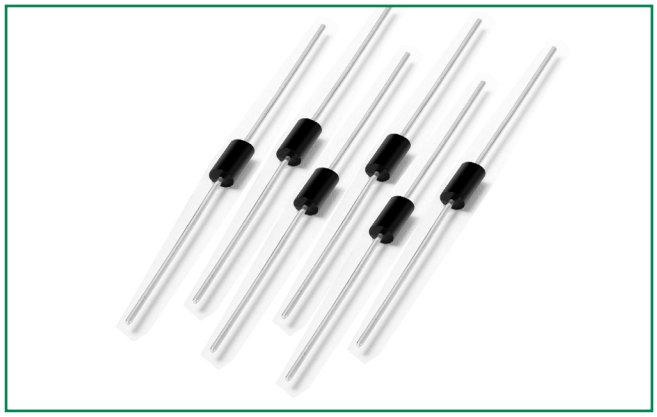
SIDACtor® Protection Thyristors
Baseband Protection (Voice-DS1)

SIDACtor® Series - DO-15



Description

The DO-15 series are designed to protect baseband equipment such as modems, line cards, CPE and DSL from damaging overvoltage transients.

The series provides a cost-effective through-hole solution that enables equipment to comply with global regulatory standards.

Features and Benefits

- Low voltage overshoot
- Low on-state voltage
- Does not degrade surge capability after multiple surge events within limit.
- Low capacitance
- Fails short circuit when surged in excess of ratings
- 2nd level interconnect is Pb-free per IPC/ JEDEC J-STD-609A.01
- RoHS compliant, lead-free and halogen-free.

Agency Approvals

Agency	Agency File Number
	E133083

Pinout Designation

Not Applicable

Schematic Symbol

Applicable Global Standards

- TIA-968-A
- TIA-968-B
- ITU K.20/21/45 Enhanced Level*
- ITU K.20/21/45 Basic Level
- GR 1089 Inter-building*
- GR 1089 Intra-building
- IEC 61000-4-5 2nd edition
- YD/T 1082
- YD/T 993
- YD/T 950

* A/B-rated parts require series resistance

Electrical Characteristics

Part Number	Marking	V_{DRM} @I_{DRM}=5µA	V_S @100V/µs	I_H	I_S	I_T	V_T @I_T=2.2 Amps	Capacitance @1MHz, 2V bias	
		V min	V max	mA min	mA max	A max	V max	pF min	pF max
P0080GALRP	P-8A	6	25	50	800	2.2	4	10	30
P1100GALRP	P11A	90	130	150	800	2.2	5	30	60
P1300GALRP	P13A	120	160	150	800	2.2	5	25	40
P1500GALRP	P15A	140	180	150	800	2.2	5	25	40
P1800GALRP	P18A	170	220	150	800	2.2	5	25	40
P2300GALRP	P23A	190	260	150	800	2.2	5	25	30
P2600GALRP	P26A	220	300	150	800	2.2	5	25	30
P3100GALRP	P31A	275	350	150	800	2.2	5	10	20
P3500GALRP	P35A	320	400	150	800	2.2	5	20	30
P1100GBLRP	P11B	90	130	150	800	2.2	5	30	60
P1300GBLRP	P13B	120	160	150	800	2.2	5	25	40
P1500GBLRP	P15B	140	180	150	800	2.2	5	25	40
P1800GBLRP	P18B	170	220	150	800	2.2	5	25	40
P2300GBLRP	P23B	190	260	150	800	2.2	5	25	30
P2600GBLRP	P26B	220	300	150	800	2.2	5	25	30
P3100GBLRP	P31B	275	350	150	800	2.2	5	20	30
P3500GBLRP	P35B	320	400	150	800	2.2	5	20	30
P4500GBLRP	P45B	400	530	150	800	2.2	5	20	45
P4500GCLRP	P45C	400	530	50	800	2.2	5	20	45

Notes:
- Absolute maximum ratings measured at T_A= 25°C (unless otherwise noted).
- Components are bi-directional.

Revised: 02/23/17

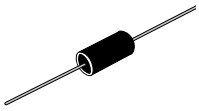
Surge Ratings

Series	I_{PP}			I_{TSM}
	10/560 [1] 10/560 [2]	10/1000 [1] 10/1000 [2]	5/310 [1] 10/700 [2]	50 / 60 Hz
	Amps min	Amps min	Amps min	Amps min
A	50	45	-	20
B	100	80	100	25
C	-	-	150	25

Notes:

1 Current waveform in µs
2 Voltage waveform in µs
- Peak pulse current rating (I_{PP}) is repetitive and guaranteed for the life of the product that remains in thermal equilibrium.
- I_{PP} ratings applicable over temperature range of -40 to +85°C
- The component must initially be in thermal equilibrium with -40°C ≤ T_J ≤ +150°C

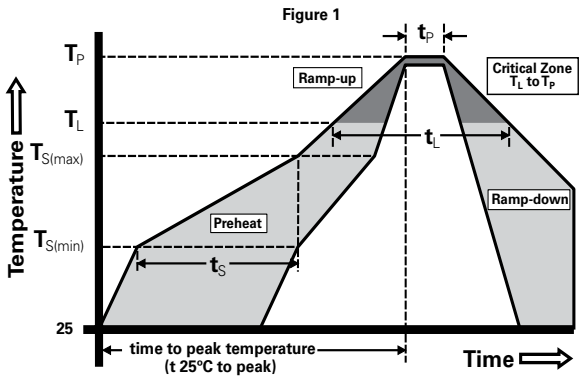
Thermal Considerations

Package	Symbol	Parameter	Value	Unit
DO-15 	T_J	Operating Junction Temperature Range	-40 to +150	°C
	T_S	Storage Temperature Range	-65 to +150	°C
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	60	°C/W

Soldering Parameters

Reflow Condition		Pb-Free assembly (see Fig. 1)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max ($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max.
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max.
Reflow	-Temperature (T_L) (Liquidus)	+217°C
	-Temperature (t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to Peak Temp (T_P)		8 min. Max.
Do not exceed		+260°C

Figure 1



Additional Information

Datasheet | **Resources** | **Samples**

Physical Specifications

Lead Material	Copper Alloy
Terminal Finish	100% Matte-Tin Plated
Body Material	UL recognized epoxy meeting flammability classification V-0

Revised: 02/23/17