

Thyristor Surge Suppressors (TSS) Data Sheet

Description

DO-15 Thyristor solid state protection thyristor protect telecommunications equipment such as modems, line cards, fax machines, and other CPE.

B Series devices are used to enable equipment to meet various regulatory requirements including GR 1089, ITU K.20, K.21 and K.45, IEC 60950, UL 60950, and TIA-968 (formerly known as FCC Part 68).



Features

Compared to surge suppression using other technologies, B Series devices offer absolute surge protection regardless of the surge current available and the rate of applied voltage (dv/dt). B Series devices:

- Cannot be damaged by voltage
- Eliminate hysteresis and heat dissipation typically found with clamping devices
- Eliminate voltage overshoot caused by fast-rising transients
- Are non-degenerative
- Will not fatigue
- Have low capacitance, making them ideal for high-speed transmission equipment
- Meets MSL level 1, per J-STD-020

Electrical Parameters

Parameter	Definition
V_{DRM}	Peak Off-state Voltage – maximum voltage that can be applied while maintaining off state
V_S	Switching Voltage – maximum voltage prior to switching to on state
V_T	On-state Voltage – maximum voltage measured at rated on-state current
I_{DRM}	Leakage Current – maximum peak off-state current measured at V_{DRM}
I_S	Switching Current – maximum current required to switch to on state
I_T	On-state Current – maximum rated continuous on-state current
I_H	Holding Current – typical current required to maintain on state
C_O	Off-state Capacitance – typical capacitance measured in off state
I_{PP}	Peak Pulse Current – maximum rated peak impulse current


Electrical Characteristics

Part Number	V_{DRM} (V)	V_S (V)	V_T (V)	I_{DRM} (μ A)	I_S (mA)	I_T (A)	I_H (mA)	C_O (pF)	I_{PP} $10 \times 1000 \mu$ s (A)	Marking
B0300LB	25	40	4	5	800	2.2	10	50	75	B03L

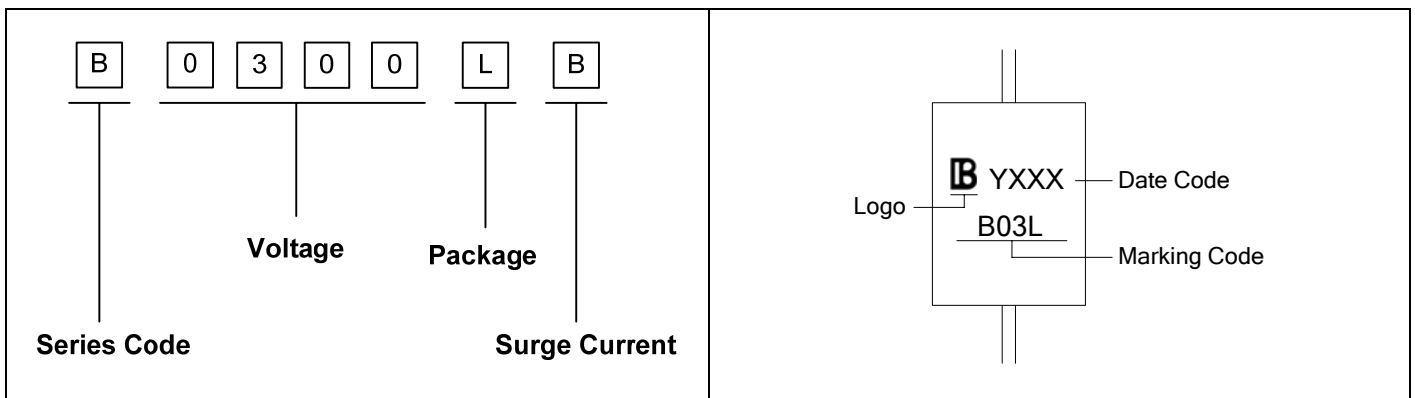
Notes:

- All measurements are made at an ambient temperature of 25°C. I_{PP} applies to -40°C through +85°C temperature range.
- Off-state capacitance(C_O) is measured at 1 MHz with a 2V bias and is typical value.
- Rating Surge Voltage: 4KV, ± 5 times (10/700 μ s)

Thermal Considerations

Package DO-15	Symbol	Parameter	Value	Unit
	T_J	Operating Junction Temperature	-40 to +150	°C
	T_S	Storage Temperature Range	-40 to +150	°C
	$R_{\theta JA}$	Junction to Ambient on printed circuit	90	°C/W

Part Number Code and Marking



Characteristics Curves

Figure 1. V-I Characteristics

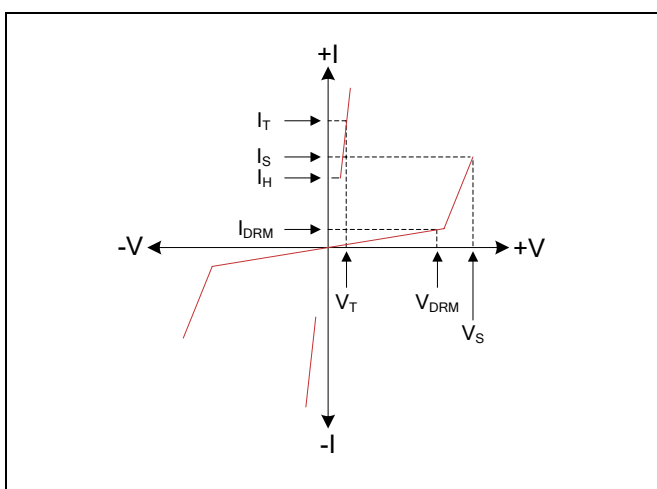
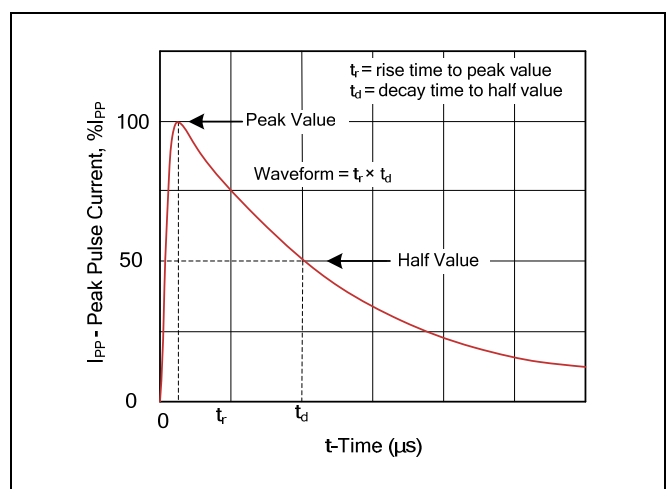


Figure 2. $t_r \times t_d$ Pulse Wave-form



Characteristics Curves

Figure 3. Normalized V_s Change versus Junction Temperature

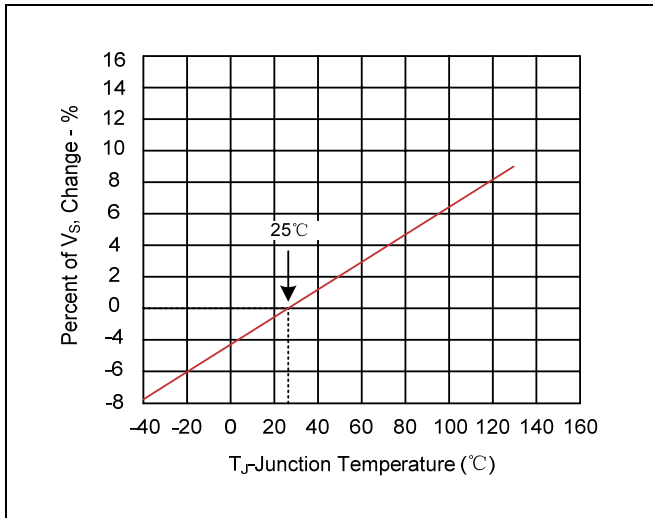
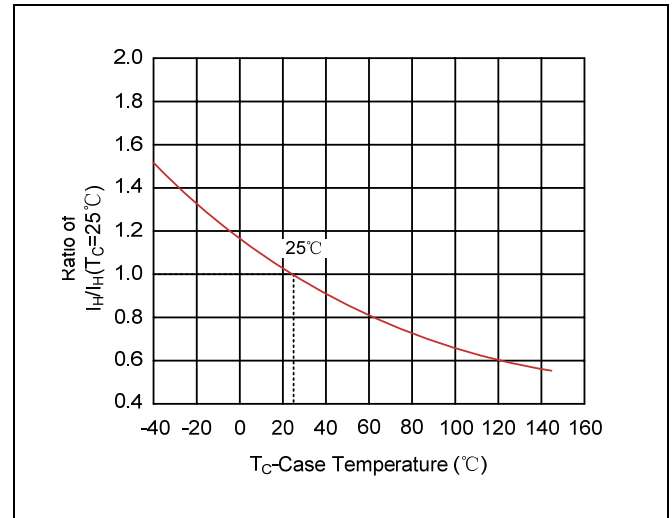
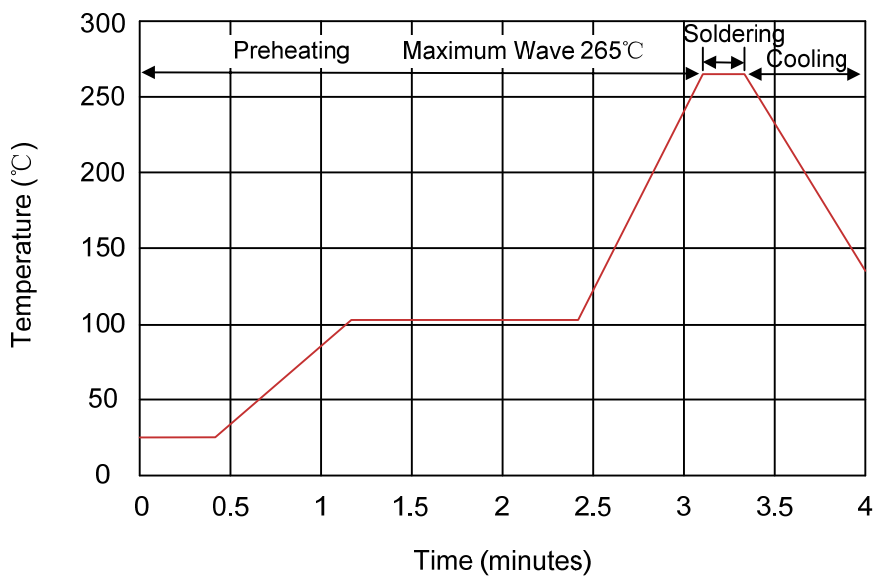


Figure 4. Normalized DC Holding Current versus Case Temperature



Recommended Soldering Conditions

Wave Soldering



Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds
Soldering	1 time

Dimensions (DO-15)

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
L	25.40	-	1.000	-
T	5.80	7.60	0.230	0.300
ΦD	2.60	3.60	0.104	0.140
Φd	0.70	0.90	0.028	0.035

Packaging

Tape	Symbol	Dimension (mm)
	A	5.0±0.5
	B	53.0±1.0
	Z	1.2Max.
	T	6.0±0.4
	E	0.8Max.
	L1-L2	1.0Max.
Reel	D	330.0±3.0
	D0	16.4±2.0
	D1	86.0±2.0
	W1	76.0±3.0
	Quantity: 4000PCS	