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Thyristor Surge Suppressors

半导体放电管

PxxxxTX Series DO-214AC/SMA

Thyristor Surge Suppressors -PxxxxTX Series

Description

DO-214AC/SMA Series are low capacitance devices designed to protect broadband equipment such as VOIP, DSL modems and DSLAMs from damaging overvoltage transients.

The series provides a surface mount solution that enables equipment to comply with global regulatory standards while limiting the impact to broadband signals.

Features

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

Part Number Code

P	x	x	x	x	T	X

LOGO	Breakdown Voltage	Type	Peak pilse current–Ipp 8/20 μ s
		S:SMD SMB	A=150A
		T:SMD SMA	B=250A
		E:DIP TO–92	C=400A
		L:DIP DO–15	

Electriacl Characteristics

Type Number	VDRM	VBO	IH	IS	IT	VT	CJ
	V	V	MA	MA	A	V	PF
P0080TA	6	25	50	800	2.2	4	50
P0300TA	25	40	50	800	2.2	4	70
P0640TA	58	77	150	800	2.2	4	50
P0720TA	65	88	150	800	2.2	4	50
P0900TA	75	98	150	800	2.2	4	45
P1100TA	90	130	150	800	2.2	4	45
P1300TA	120	160	150	800	2.2	4	45
P1500TA	140	180	150	800	2.2	4	40
P1800TA	170	220	150	800	2.2	4	40
P2300TA	190	260	150	800	2.2	4	35
P2600TA	220	300	150	800	2.2	4	35
P3100TA	275	350	150	800	2.2	4	30
P3500TA	320	400	150	800	2.2	4	30

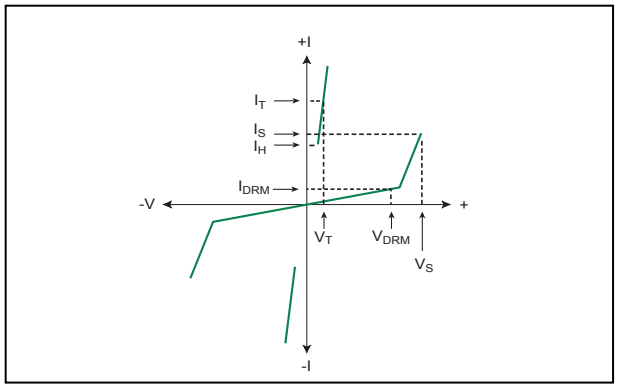
Notes:
Is:Switching Current – maximum current required to switch to on state
IDRM:Leakage Current – maximum peak off-state current measured at VDRM
IH:Holding Current – minimum current required to maintain on state
IPP:Peak Pulse Current – maximum rated peak impulse current
IT:On-state Current – maximum rated continuous on-state current
VDRM:Peak Off-state Voltage – maximum voltage that can be applied while maintaining off state
VT:On-state Voltage – maximum voltage measured at rated on-state current
.

SERIES	Peak Pilse Current-Ipp(A)				
	2/10μs	8/20μs	10/160μs	10/560μs	10/1000μs
A	200	150	100	60	50

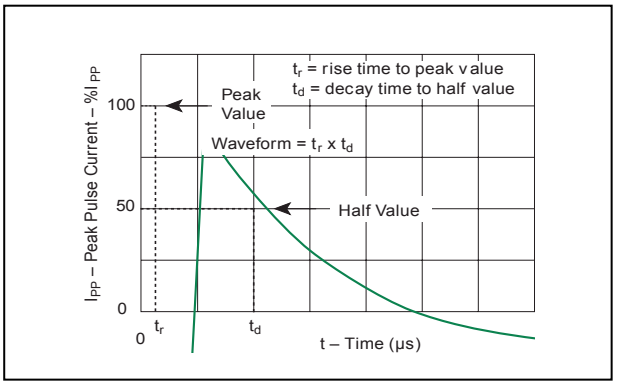
Thermal Considerations

Package SMA	Symbol	Parameter	Value	Unit
	TJ	Operating Junction Temperature	-40 to +150	℃
	TS	Storage Temperature Range	-40 to +150	℃
	RθJA	Junction to Ambient on printed circuit	90	℃/W

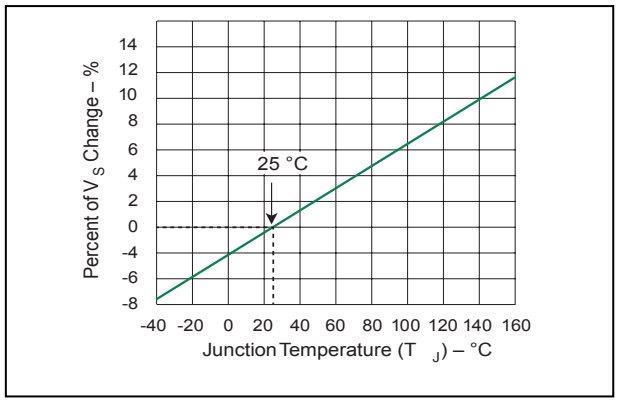
V-I Characteristics



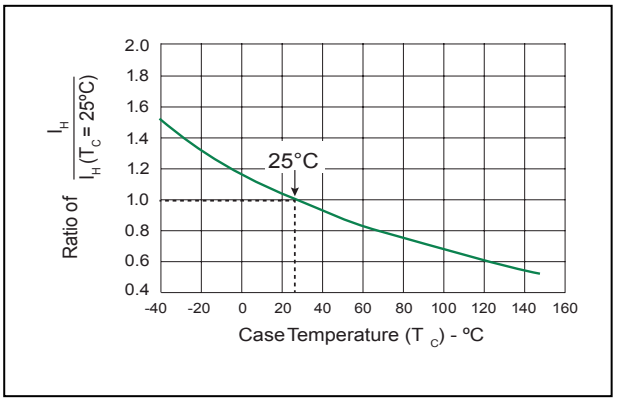
t_r x t_d Pulse Waveform



Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature



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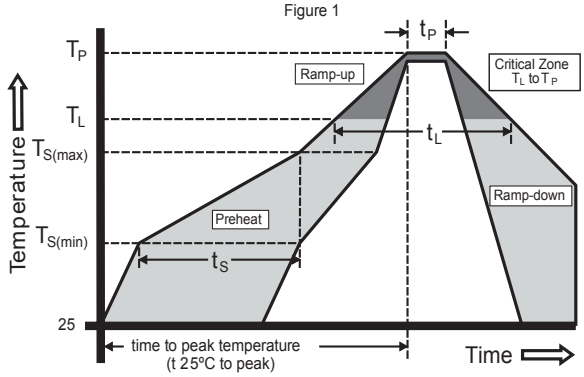
Soldering Parameters

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



Physical Specifications

Lead Material	Copper Alloy
Terminal Finish	100% Matte-Tin Plated
Body Material	UL recognized epoxy meeting flammability classification 94V-0

Environmental Specifications

High Temp Voltage Blocking	80% Rated V_{DRM} (V_{AC} Peak) +125°C or +150°C, 504 or 1008 hrs. MIL-STD-750 (Method 1040) JEDEC, JESD22-A-101
Temp Cycling	-65°C to +150°C, 15 min. dwell, 10 up to 100 cycles. MIL-STD-750 (Method 1051) EIA/JEDEC, JESD22-A104
Biased Temp & Humidity	52 V_{DC} (+85°C) 85%RH, 504 up to 1008 hrs. EIA/JEDEC, JESD22-A-101
High Temp Storage	+150°C 1008 hrs. MIL-STD-750 (Method 1031) JEDEC, JESD22-A-101
Low Temp Storage	-65°C, 1008 hrs.
Thermal Shock	0°C to +100°C, 5 min. dwell, 10 sec. transfer, 10 cycles. MIL-STD-750 (Method 1056) JEDEC, JESD22-A-106
Autoclave (Pressure Cooker Test)	+121°C, 100%RH, 2atm, 24 up to 168 hrs. EIA/JEDEC, JESD22-A-102
Resistance to Solder Heat	+260°C, 30 secs. MIL-STD-750 (Method 2031)
Moisture Sensitivity Level	85%RH, +85°C, 168 hrs., 3 reflow cycles (+260°C Peak). JEDEC-J-STD-020, Level 1

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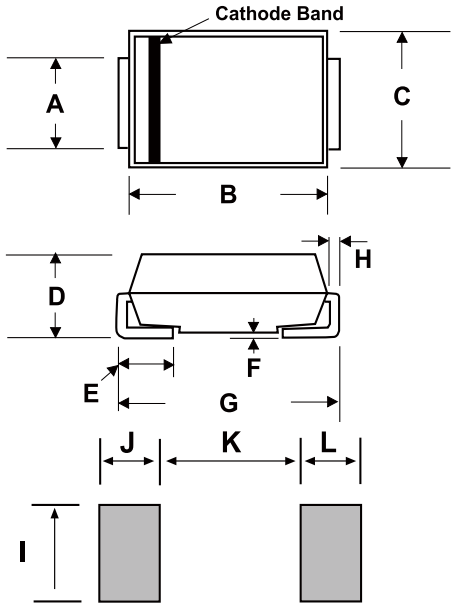
Dimensions DO-214AC

Unit:mm



DIM	Inches		Millimeters	
	Min	Max	Min	Max
A	0.049	0.065	1.250	1.650
B	0.157	0.177	3.990	4.500
C	0.100	0.110	2.540	2.790
D	0.078	0.090	1.980	2.290
E	0.030	0.060	0.780	1.520
F	-	0.008	-	0.203
G	0.194	0.208	4.930	5.280
H	0.006	0.012	0.152	0.305
I	0.070	-	1.800	-
J	0.082	-	2.100	-
K	-	0.090	-	2.300
L	0.082	-	2.100	-

Packaging

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
PxxxxTX	DO-214AC	2000	Tape&Reel - 7’ tape	EIA RS-481

Tape and Reel Specification