P0640DM

THYRISTOR SURGE SUPPRESSORS

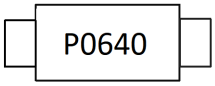
1. Description

P0640DM is a type of semiconductor component. It is designed to protect baseband equipment from damaging overvoltage transients, such as Industrial equipment，Electronic detonator and more..

2. Features

- Low profile package.
- Low on-state voltage.
- Excellent capability of absorbing transient surge.
- Quick response to surge voltage (ns Level).
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).
- IEC61000-4-5 2KV (10/700μs)
- Moisture sensitivity level: Level 1.

3 . Pinning information

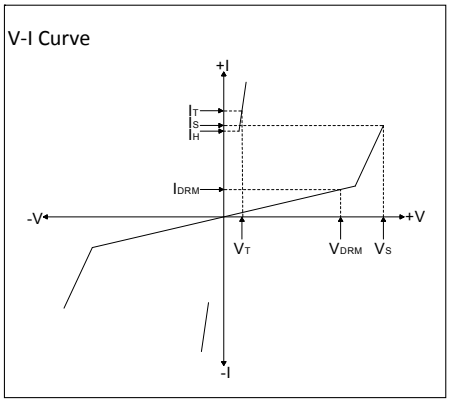
Simplified outline	Equivalent Circuit	Marking	Package
		P0640	SOD123-FL

4. Absolute Maximum Ratings(T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_J	-40~+125	°C
Operating junction temperature range	T_{stg}	-55~+150	°C
Repetitive peak pulse current@10/1000 uS	I_{pp}	35	A

5. ELECTRICAL CHARACTERISTICS(T_A=25°C)

Parameter	Symbol
Peak off-state voltage	V_{DRM}
Off-state current	I_{DRM}
Switching voltage	V_S
Switching current	I_S
On-state voltage	V_T
On-state current	I_T
Holding current	V_H
Off-state capacitance	C_O



Microdiode Semiconductor

6. ELECTRICAL CHARACTERISTICS(T_A =25°C,Continued)

Part Number	I_{DRM}@V_{DRM}		V_S①@ I_S		V_T@ I_T		I_H	C_O②	V_{PP}@ 10/700uS	I_{PP}@ 10/1000uS
	uA	V	V	mA	V	A	mA	pF	V	A
	max		max	max	max	max	Min	max	Min	Min
P0640DM	1	58	77	800	4	2.2	50	25	2000	35

①.Vs is measured at 100kV/s

②.Off-state capacitance is measured in V_{DC}=2V, V_{RMS}=1V, f=1MHz

7.Typical Characterisitics

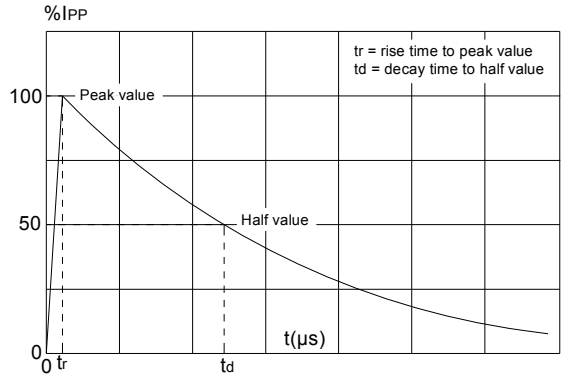


Figure 1 . Ttr × td pulse waveform

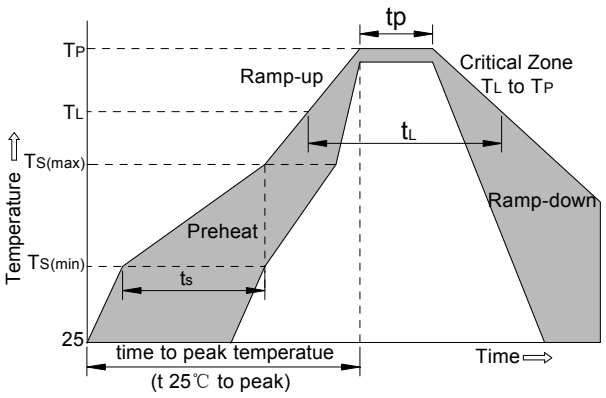


Figure 2 . Reflow condition

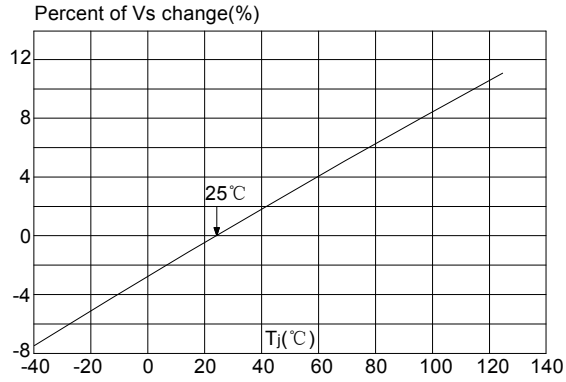


Figure 3 . Normalized Vs change vs. junction temperature

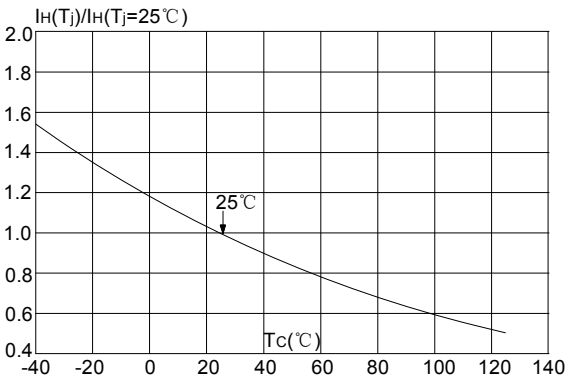


Figure 4 . Normalized DC holding current vs. case temperature

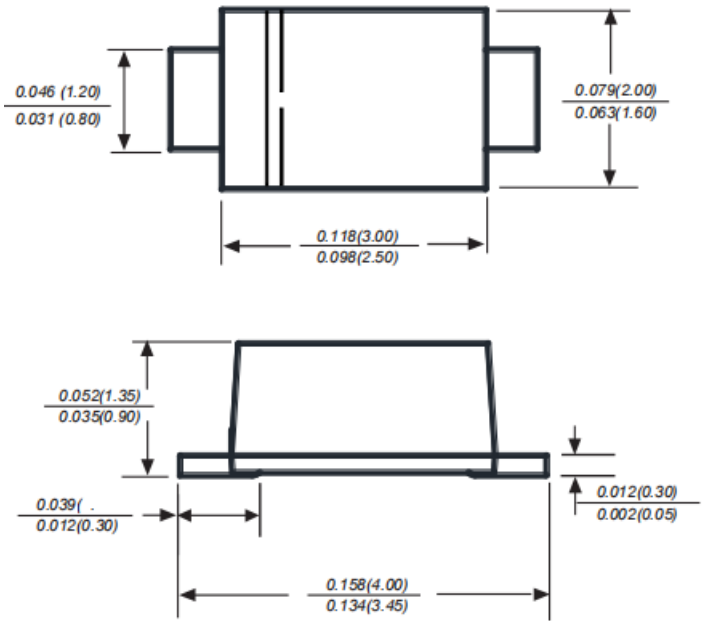
The curve above is for reference only.

8.SOLDERING PARAMETERS

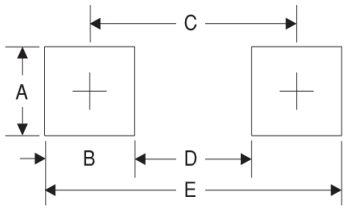
Reflow Condition		Pb-Free assembly (see FIG.2)
Pre Heat	-Temperature Min ($T_{S(min)}$)	+150°C
	-Temperature Max($T_{S(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T) to peak)		3°C/sec. Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (T_L)(Liquidus)	+217°C
	-Temperature (t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°Cof 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

9. Outline Drawing

SOD123 - FL Package Outline Dimensions



10. Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	1.2	0.047
B	1.2	0.047
C	3.2	0.126
D	2	0.079
E	4.4	0.173

11.PACKAGE SPECIFICATIONS

PACKAGE	REELSIZE	REEL (pcs)	COMPONENT SPACING (mm)	BOX (pcs)	INNER BOX (mm)	REEL DIA, (mm)	CARTON SIZE (mm)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOD123-FL	7"	3,000	4.0	45000	190*190*190	178	400*400*220	180,000	9.0

12.Important Notice and Disclaimer

Microdiode Semiconductor (Shenzhen) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design,purchase or use.

Microdiode Semiconductor (Shenzhen) makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does Microdiode Semiconductor (Shenzhen) assume any liability for application assistance or customer product design. Microdiode Semiconductor (Shenzhen) does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Microdiode Semiconductor (Shenzhen).Microdiode Semiconductor (Shenzhen) products are not authorized for use as critical components in life support devices or systems without express written approval of Microdiode Semiconductor (Shenzhen).