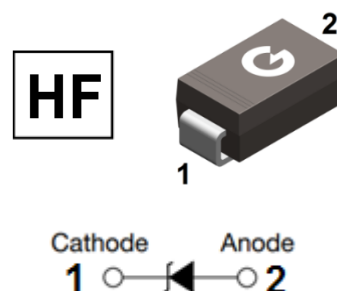


Super-Fast Recovery Rectifier

TES1A - TES1D

Features

- Low forward voltage drop
- High forward surge current capability
- Low-profile SMD ideal for automated manufacturing
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards



Mechanical Data

- Case: SMA molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	TES1A	TES1B	TES1C	TES1D	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	50	100	150	200	V
RMS Reverse Voltage	V _{RMS}	35	70	105	140	V
DC Blocking Voltage	V _{DC}	50	100	150	200	V
Maximum Average Forward Output Current	I _{F_AV}	1.0				A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I _{FSM}	30				A
I ² t Rating for Fusing	I ² t	3.7				A ² S

Thermal Characteristics

Parameter	Symbol	TES1A	TES1B	TES1C	TES1D	Unit
Typical Thermal Resistance *1	R _{θJA}	70				°C/W
	R _{θJC}	30				
	R _{θJL}	25				
Operating Junction Temperature Range	T _J	-55 ~ +150				°C
Storage Temperature Range	T _{STG}	-55 ~ +150				°C

Note *1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

Super-Fast Recovery Rectifier

TES1A - TES1D

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R = 2\mu\text{A}$, TES1A		50	-	-	V
		$I_R = 2\mu\text{A}$, TES1B		100	-	-	V
		$I_R = 2\mu\text{A}$, TES1C		150	-	-	V
		$I_R = 2\mu\text{A}$, TES1D		200	-	-	V
Maximum Instantaneous Forward Voltage	V_F	$I_F = 1.0\text{A}$		-	-	0.98	V
Maximum Reverse Current	I_R	Rated	@ $T_A = 25^\circ\text{C}$	-	-	5.0	μA
		V_R	@ $T_A = 125^\circ\text{C}$	-	-	100	
Maximum Reverse Recovery Time	t_{rr}	$I_F = 0.5\text{A}$, $I_{RM} = 1\text{A}$, $I_{R(REC)} = 0.25\text{A}$		-	-	35	ns

Super-Fast Recovery Rectifier

TES1A - TES1D

Ratings and Characteristic Curves (@ $T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

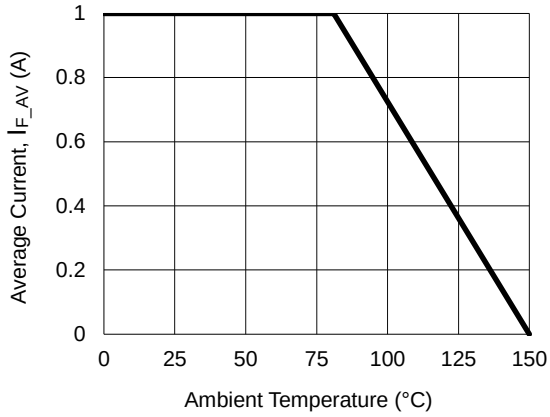


Fig.2 Surge Current Derating Curve

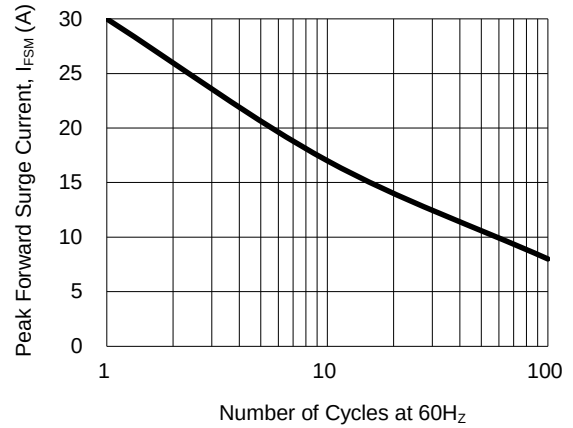


Fig.3 Typical Forward Voltage Characteristics

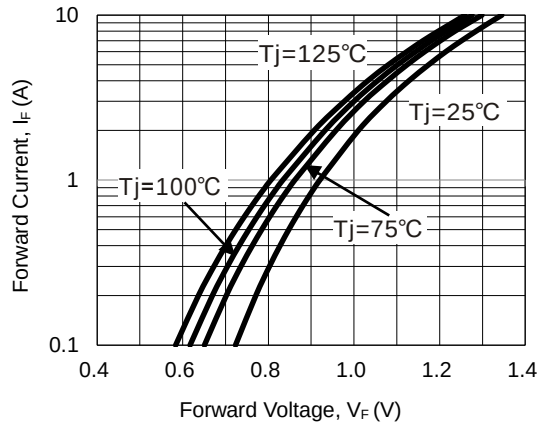
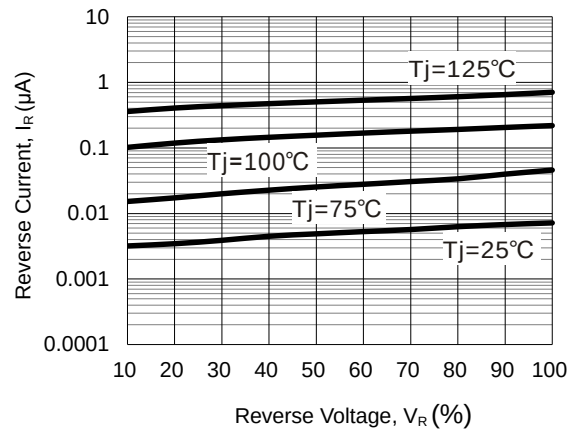


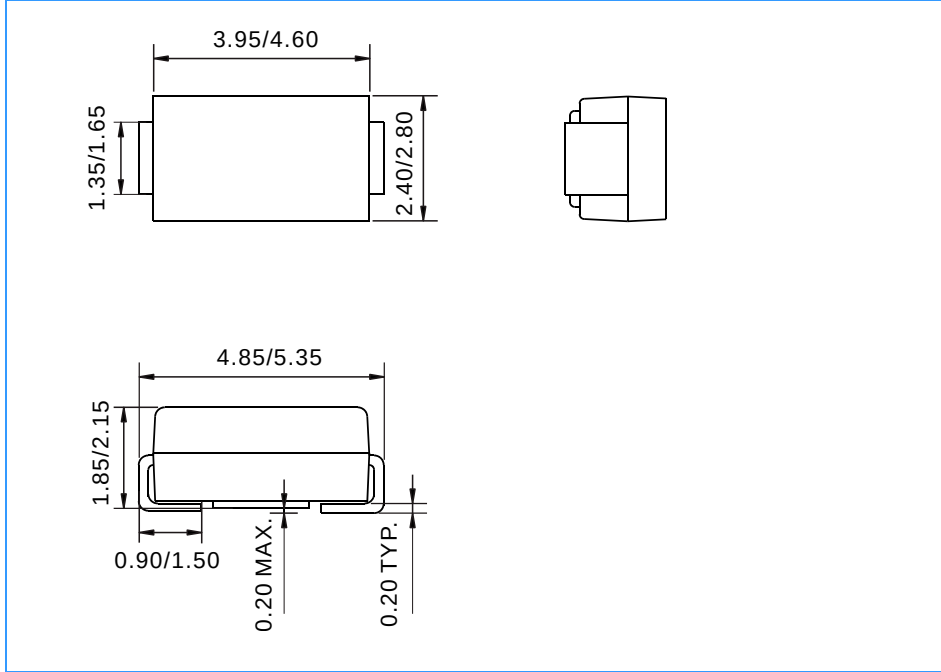
Fig.4 Typical Reverse Characteristics



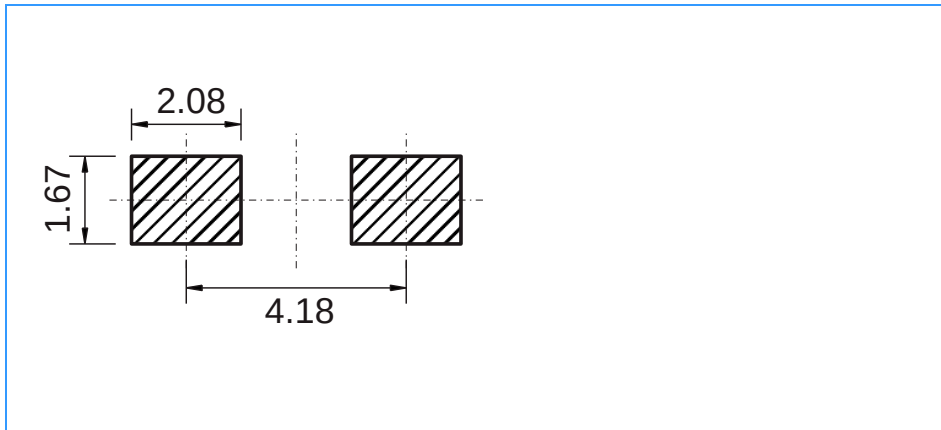
Super-Fast Recovery Rectifier

TES1A - TES1D

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
TES1A	ES1A	SMA	5000 pcs / Tape & Reel
TES1B	ES1B	SMA	5000 pcs / Tape & Reel
TES1C	ES1C	SMA	5000 pcs / Tape & Reel
TES1D	ES1D	SMA	5000 pcs / Tape & Reel