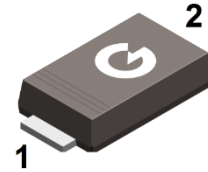


Features

- Metal silicon junction, majority carrier conduction
- High forward surge current capability
- Low forward voltage drop
- High temperature soldering guaranteed: 260°C @ 10s
- Robust guarding for over voltage protection
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF



SMAF

Mechanical Data

- Case: SMAF
- Molding compound: UL flammability classification rating 94-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208
- Polarity: Color band denotes cathode end

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TSH32F	SMAF	10000 pcs / Tape & Reel	SH32F
TSH33F	SMAF	10000 pcs / Tape & Reel	SH33F
TSH34F	SMAF	10000 pcs / Tape & Reel	SH34F
TSH345F	SMAF	10000 pcs / Tape & Reel	SH345F

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

Parameter	Symbol	TSH32F	TSH33F	TSH34F	TSH345F	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	20	30	40	45	V
RMS Reverse Voltage	V _{RMS}	14	21	28	31.5	V
DC Blocking Voltage	V _{DC}	20	30	40	45	V
Average Forward Output Current	I _{F(AV)}	3.0				A
Peak Forward Surge Current, 8.3ms Single Half-Sine-Wave	I _{FSM}	100				A

Thermal Characteristics

Parameter	Symbol	TSH32F	TSH33F	TSH34F	TSH345F	Unit
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	78				°C/W
Thermal Resistance Junction-to-Case ^{*1}	R _{θJC}	18				°C/W
Thermal Resistance Junction-to-Lead ^{*1}	R _{θJL}	20				°C/W
Operating Junction Temperature Range	T _J	-55 ~ +150				°C
Storage Temperature Range	T _{STG}	-55 ~ +150				°C

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage *2	V_F	$I_F = 3\text{A}$	-	-	0.55	V
Maximum Peak Reverse Current *3	I_R	Rated V_R , $T_J = 25^\circ\text{C}$	-	-	100	μA
		Rated V_R , $T_J = 100^\circ\text{C}$	-	-	10	mA
Diode capacitance	C_J	$V_R = 4\text{V}$, $f = 1\text{MHz}$	-	170	-	pF

Notes:

1. The data tested by surface mounted on p.c.b. with 10 mm x 20 mm x 0.1 mm copper pad area
2. The data tested by pulsed, pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 1\%$
3. The data tested by pulsed, pulse width $\leq 40\text{ms}$

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

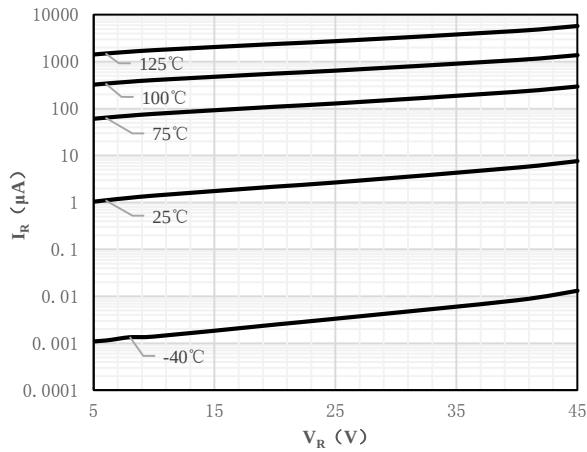


Fig 1 Typical Reverse Characteristic

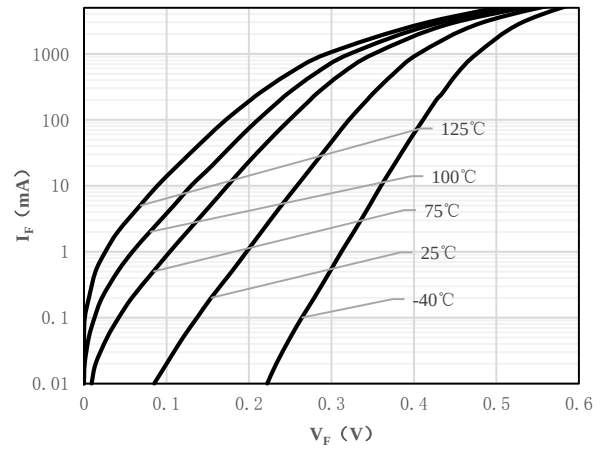


Fig 2 Typical Forward Characteristics

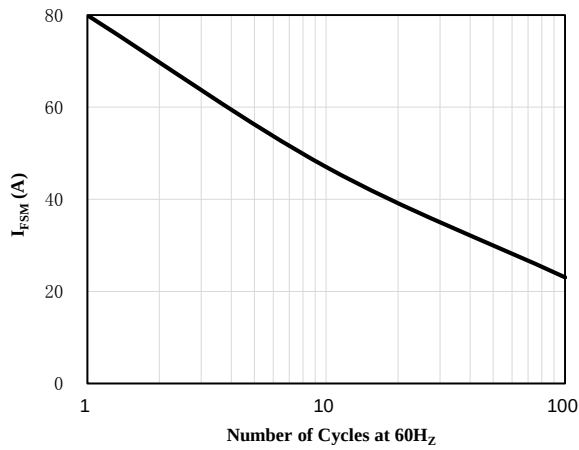


Fig 3 Surge Current Derating Curve

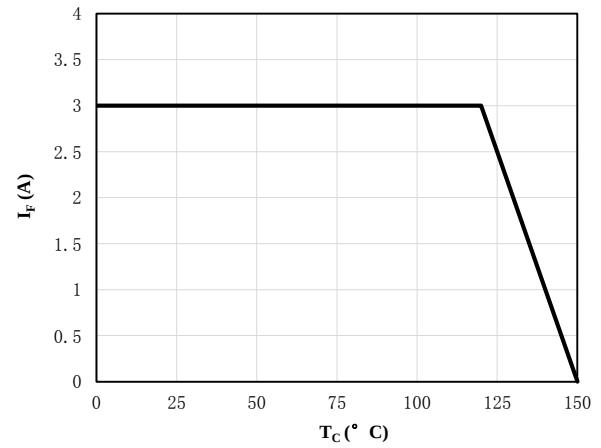


Fig 4 Forward Current Derating Curve

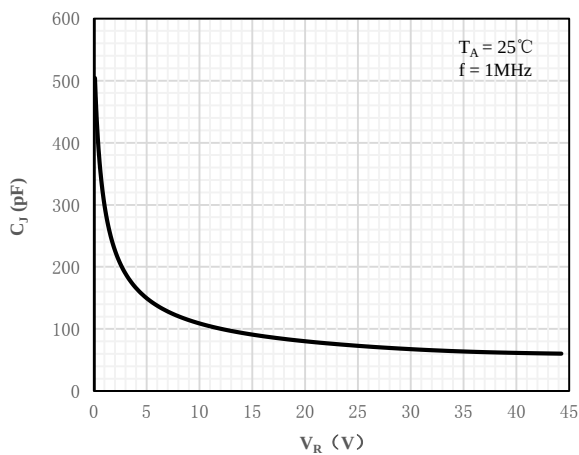
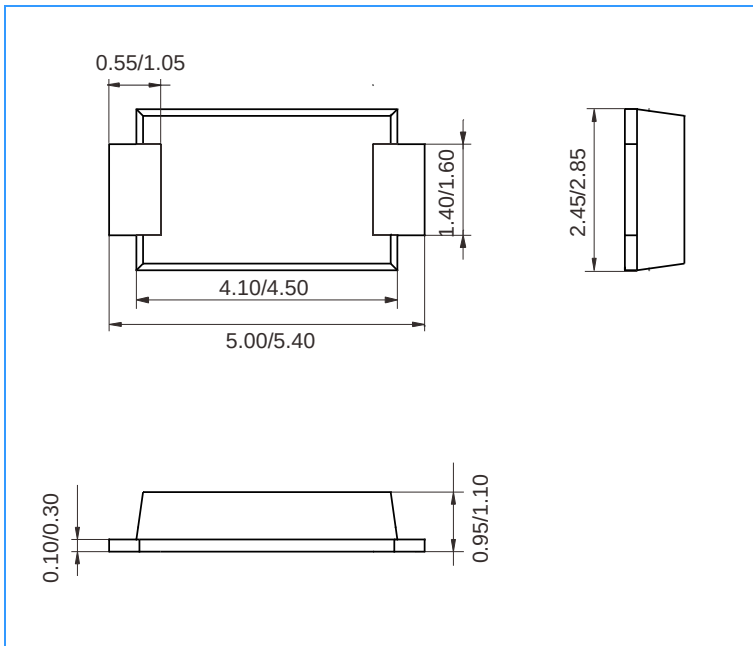


Fig 5 Capacitance vs. Reverse Voltage

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)

