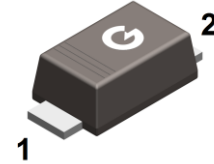


Features

- 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

Cathode 1 Anode 2



SOD-123FL

Mechanical Data

- Case: SOD-123FL
- Molding compound: UL flammability classification rating 94-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TMBRX180	SOD-123FL	10000 pcs / Tape & Reel	S8
TMBRX190	SOD-123FL	10000 pcs / Tape & Reel	S9
TMBRX1A0	SOD-123FL	10000 pcs / Tape & Reel	SA

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

Parameter	Symbol	TMBRX180	TMBRX190	TMBRX1A0	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	80	90	100	V
RMS Reverse Voltage	V _{RMS}	56	63	70	V
DC Blocking Voltage	V _{DC}	80	90	100	V
Average Forward Output Current	I _{F_AV}	1.0			A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I _{FSM}	30			A

Thermal Characteristics

Parameter	Symbol	TMBRX180	TMBRX190	TMBRX1A0	Unit
Thermal Resistance Junction-to-Air *1	R _{θJA}	85			°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	23			°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	15			°C/W
Thermal Resistance Junction-to-Air *2	R _{θJA}	100			°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
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R = 100\mu\text{A}$, TMBRX180	80	-	-	V
		$I_R = 100\mu\text{A}$, TMBRX190	90	-	-	V
		$I_R = 100\mu\text{A}$, TMBRX1A0	100	-	-	V
Forward Voltage ^{*3}	V_F	$I_F = 1\text{A}$	-	-	0.8	V
Maximum Peak Reverse Current ^{*4}	I_R	Rated V_R , $T_J = 25^\circ\text{C}$	-	-	30	μA
		Rated V_R , $T_J = 100^\circ\text{C}$	-	-	5	mA
		Rated V_R , $T_J = 125^\circ\text{C}$	-	-	10	mA
Diode capacitance	C_J	$V_R = 4\text{V}$, $f = 1\text{MHz}$	-	33	-	pF

Notes:

1. The data tested by surface mounted on 10 mm x 20 mm x 0.1 mm copper pad area
2. The data tested by surface mounted on 5mm x 5mm FR-4 board with 2OZ copper
3. The data tested by pulsed, pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 1\%$
4. The data tested by pulsed, pulse width $\leq 40\text{ms}$

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

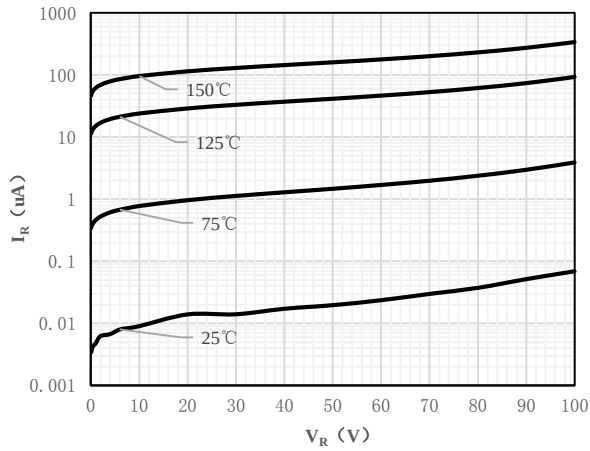


Fig 1 Typical Reverse Characteristic

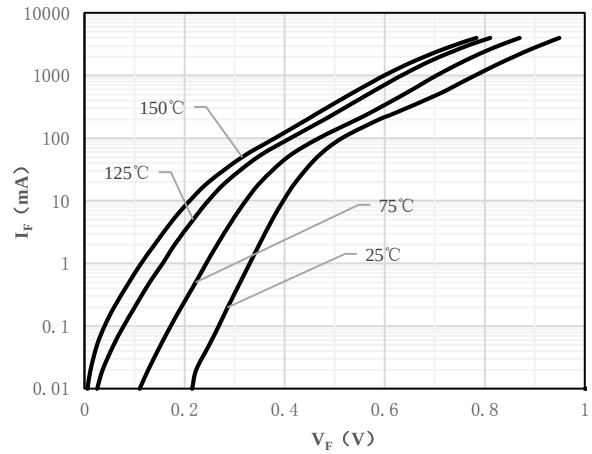


Fig 2 Typical Forward Characteristics

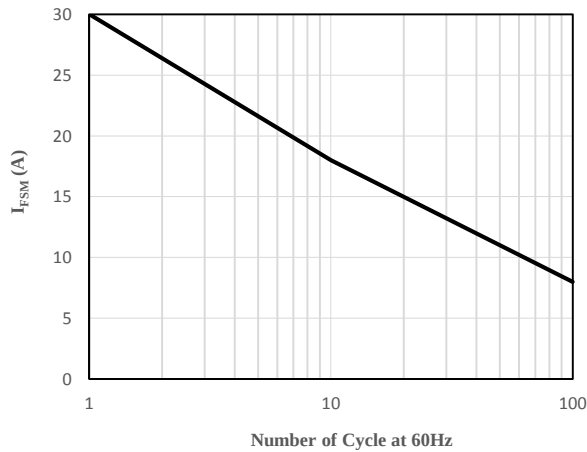


Fig 3 Surge Current Derating Curve

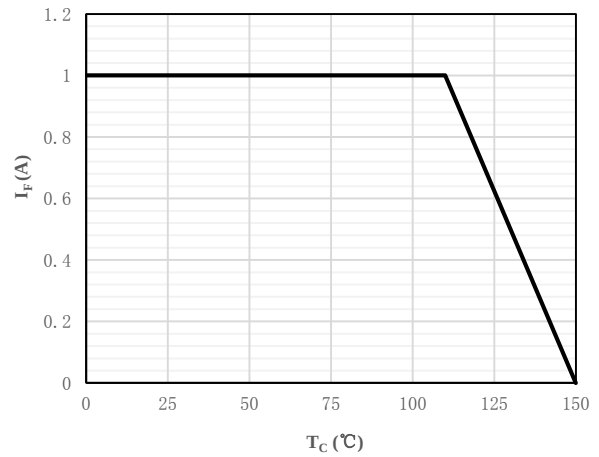


Fig 4 Forward Current Derating Curve

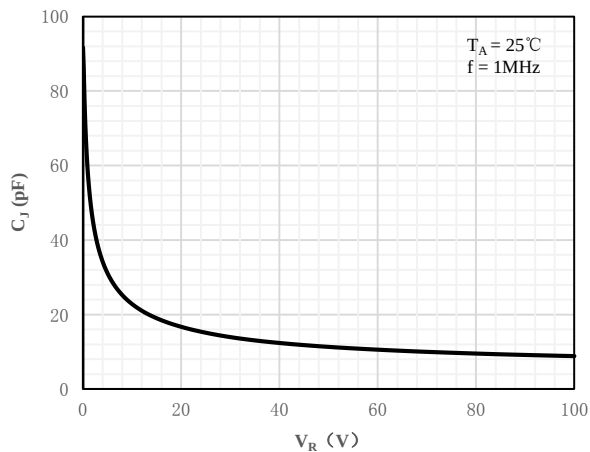
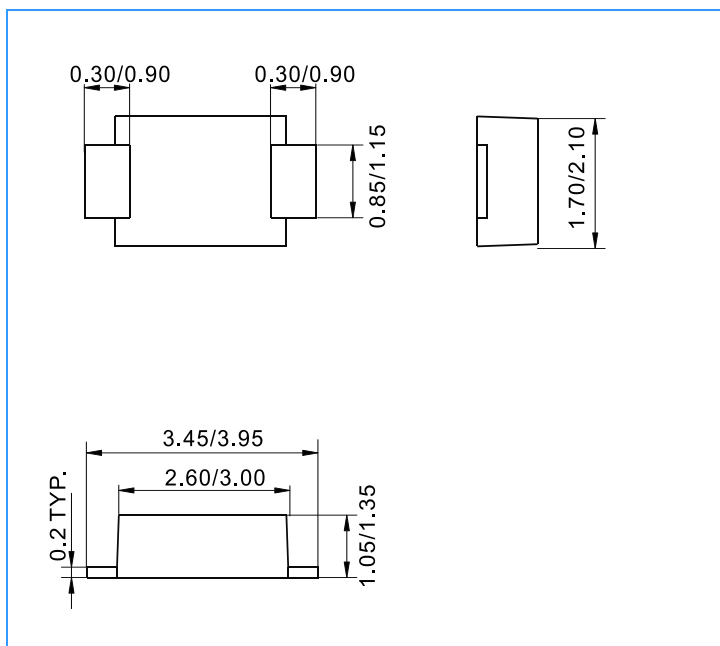


Fig 5 Capacitance vs. Reverse Voltage

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)

