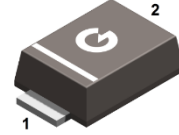


Features

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

HF

Cathode 1 Anode 2



SMAFL

Mechanical Data

- Case: SMAFL
- 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
US1JFA	SMAFL	10000 pcs / Tape & Reel	U1J
US1KFA	SMAFL	10000 pcs / Tape & Reel	U1K
US1MFA	SMAFL	10000 pcs / Tape & Reel	U1M

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

Parameter	Symbol	US1JFA	US1KFA	US1MFA	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	600	800	1000	V
RMS Reverse Voltage	V _{RMS}	420	560	700	V
DC Blocking Voltage	V _{DC}	600	800	1000	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	US1JFA	US1KFA	US1MFA	Unit
Thermal Resistance Junction-to-Air *1	R _{θJA}	64			°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	27			°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	21			°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	$V_{(BR)}$	$I_R = 2\mu\text{A}$, US1JFA	600	-	-	V
		$I_R = 2\mu\text{A}$, US1KFA	800	-	-	V
		$I_R = 2\mu\text{A}$, US1MFA	1000	-	-	V
Forward Voltage *2	V_F	$I_F = 1\text{A}$	-	-	1.7	V
Maximum Peak Reverse Current *3	I_R	Rated V_R , $T_J = 25^\circ\text{C}$	-	-	5	μA
		Rated V_R , $T_J = 125^\circ\text{C}$	-	-	100	μA
Reverse Recovery Time	t_{rr}	$I_F = 0.5\text{A}$, $I_{rr} = 0.25\text{A}$, $I_R = 1\text{A}$	-	-	75	ns
Diode capacitance	C_J	$V_R = 4\text{V}$, $f = 1\text{MHz}$	-	6.5	-	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)

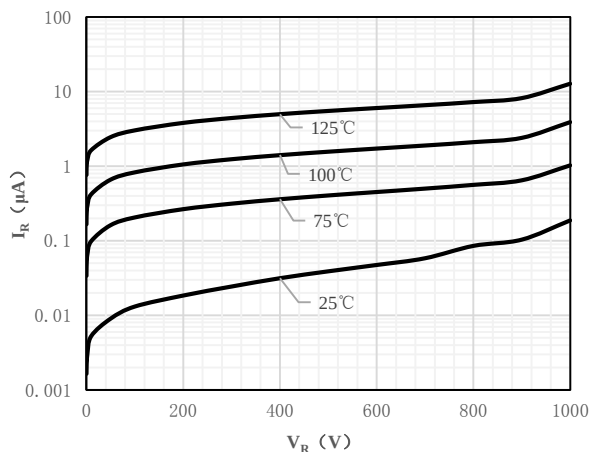


Fig 1 Typical Reverse Characteristic

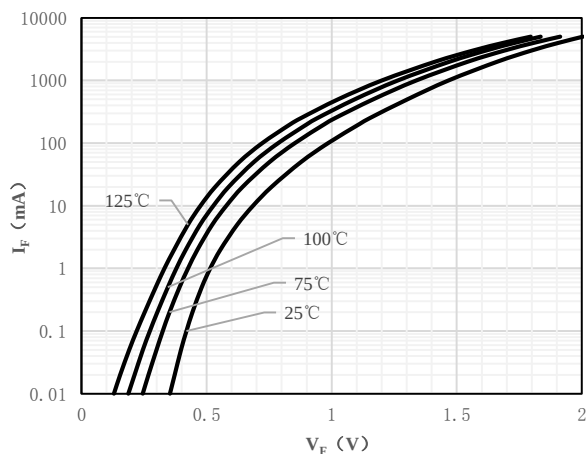


Fig 2 Typical Forward Characteristics

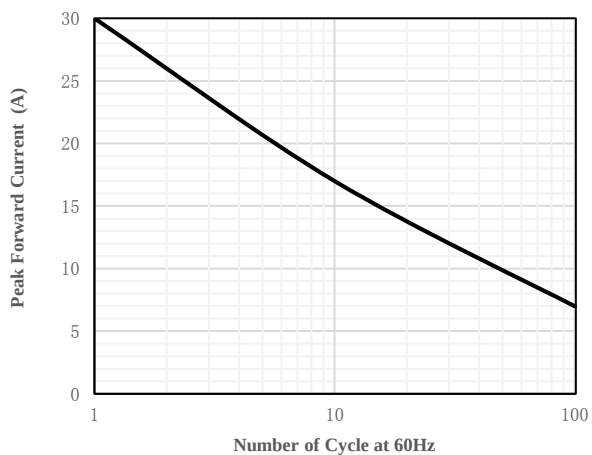


Fig 3 Surge Current Derating Curve

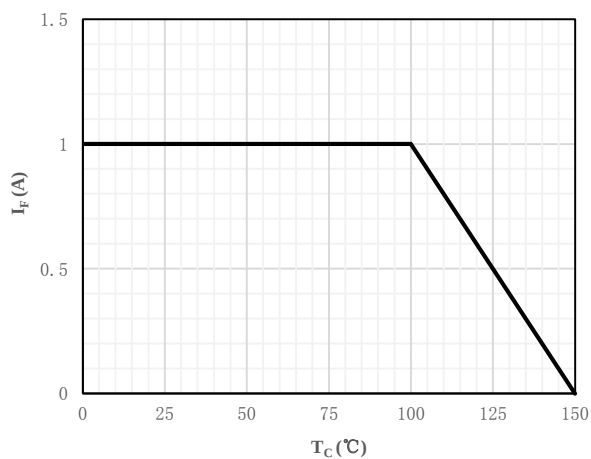


Fig 4 Forward Current Derating Curve

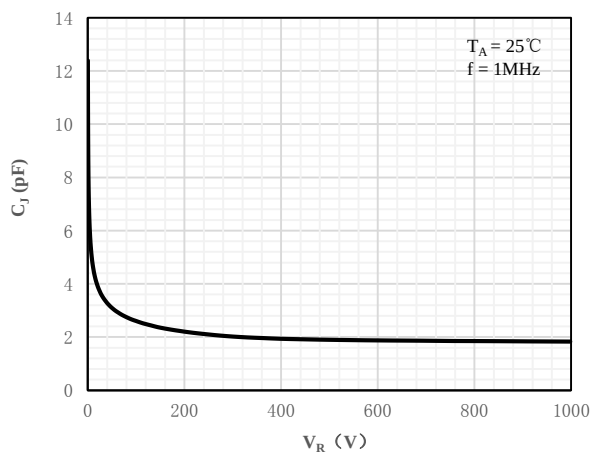
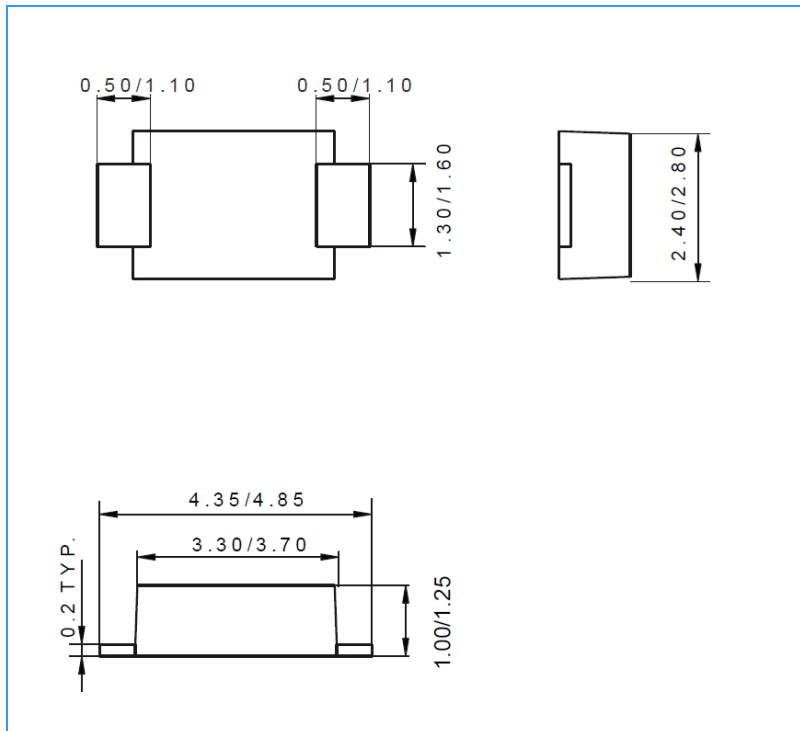


Fig 5 Capacitance vs. Reverse Voltage

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)

