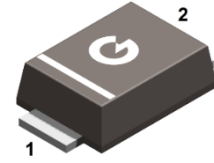


Features

- For surface mounted applications
- Ideal for automated placement
- Low forward voltage drop
- High forward surge current capability
- RoHS compliant with Halogen-free

HF

Cathode 1 Anode 2



SMAFL

Mechanical Data

- Case: SMAFL
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
S3DFA	SMAFL	10000 pcs / Tape & Reel	3DF
S3GFA	SMAFL	10000 pcs / Tape & Reel	3GF
S3JFA	SMAFL	10000 pcs / Tape & Reel	3JF
S3KFA	SMAFL	10000 pcs / Tape & Reel	3KF
S3MFA	SMAFL	10000 pcs / Tape & Reel	3MF

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

Parameter	Symbol	S3DFA	S3GFA	S3JFA	S3KFA	S3MFA	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	200	400	600	800	1000	V
RMS Reverse Voltage	V _{RMS}	140	280	420	560	700	V
DC Blocking Voltage	V _{DC}	200	400	600	800	1000	V
Average Forward Output Current	I _{F(AV)}	3.0					A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I _{FSM}	80					A

Thermal Characteristics

Parameter	Symbol	S3DFA	S3GFA	S3JFA	S3KFA	S3MFA	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	$V_{(BR)}$	$I_R = 2\mu\text{A}$, S3DFA	200	-	-	V
		$I_R = 2\mu\text{A}$, S3GFA	400	-	-	V
		$I_R = 2\mu\text{A}$, S3JFA	600	-	-	V
		$I_R = 2\mu\text{A}$, S3KFA	800	-	-	V
		$I_R = 2\mu\text{A}$, S3MFA	1000	-	-	V
Forward Voltage *2	V_F	$I_F = 3.0\text{A}$	-	-	1.15	V
Maximum Peak Reverse Current *3	I_R	Rated V_R , $T_J = 25^\circ\text{C}$	-	-	5	μA
		Rated V_R , $T_J = 125^\circ\text{C}$	-	-	200	μA
Diode capacitance	C_J	$V_R = 4\text{V}$, $f = 1\text{MHz}$	-	20	-	pF
Reverse Recovery Time	t_{rr}	$I_F = 0.5\text{A}$, $I_{rr} = 0.25\text{A}$, $I_R = 1\text{A}$	-	2320	-	ns

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)

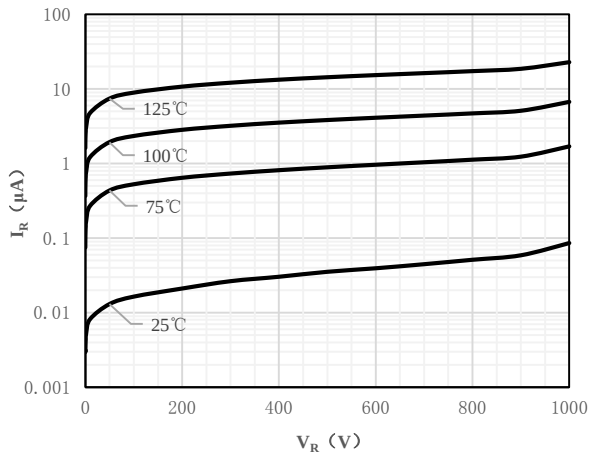


Fig 1 Typical Reverse Characteristic

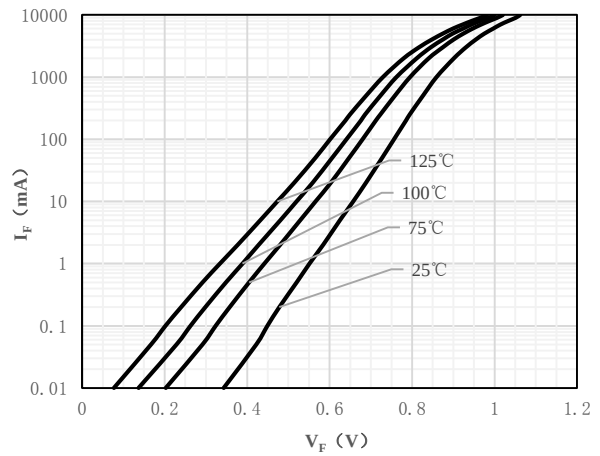


Fig 2 Typical Forward Characteristics

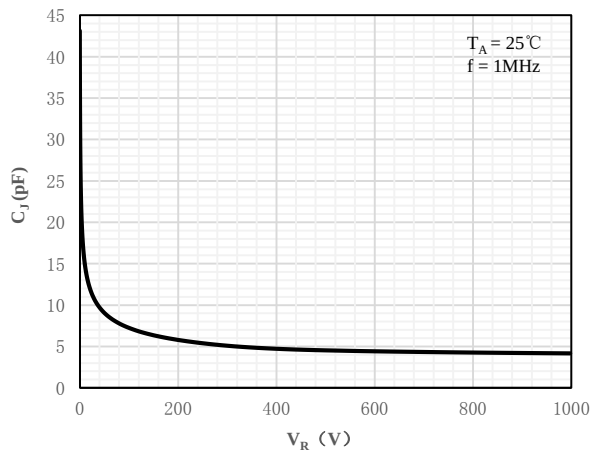


Fig 3 Capacitance vs. Reverse Voltage

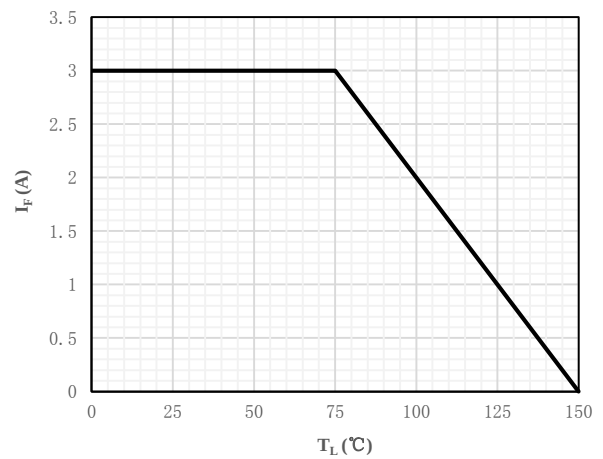


Fig 4 Forward Current Derating Curve

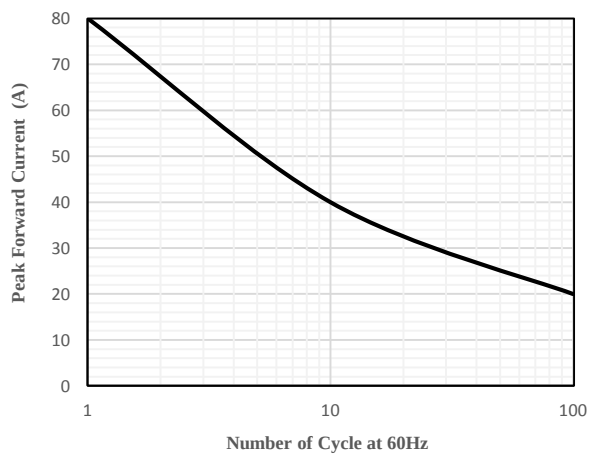
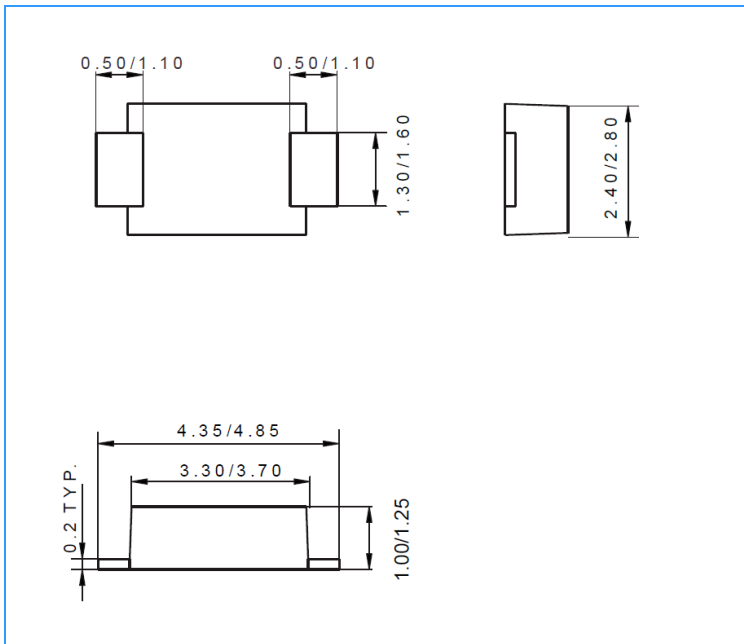


Fig 5 Surge Current Derating Curve

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)

