



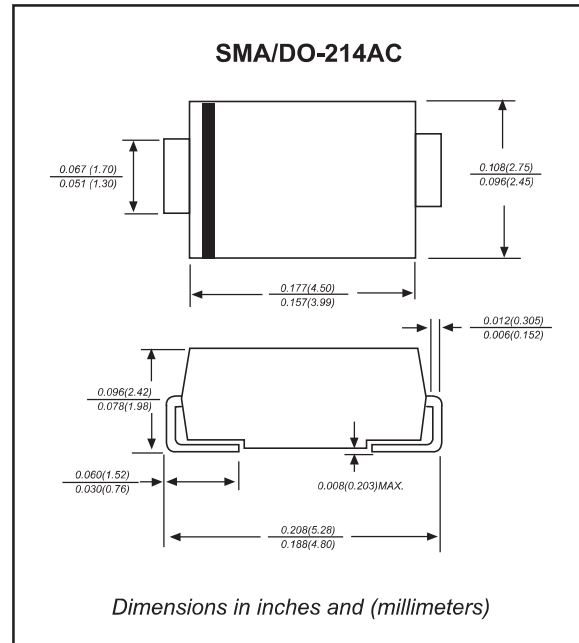
Features

- ▶ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ▶ For surface mounted applications
- ▶ Ultra fast switching for high efficiency
- ▶ Low reverse leakage
- ▶ Built-in strain relief, ideal for automated placement
- ▶ High forward surge current capability
- ▶ High temperature soldering guaranteed 260°C/10 seconds at terminals
- ▶ Glass passivated chip junction
- ▶ Compliant to Halogen-free

Mechanical data

- ▶ **Case:** JEDEC SMA/DO-214AC molded plastic body
- ▶ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ▶ **Polarity:** Color band denotes cathode end
- ▶ **Mounting Position:** Any

Package outline



MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	BYG21M-E3-FS	UNIT
Device marking code		H12	
Maximum repetitive peak reverse voltage	V_{RRM}	1000	V
Average forward current	$I_{F(AV)}$	1.5	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	30	A
Pulse energy in avalanche mode, non repetitive (inductive load switch off) $I_{BR(R)} = 1\text{ A}$, $T_J = 25\text{ }^{\circ}\text{C}$	E_R	20	mJ
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	BYG21M-E3-FS	UNIT
Maximum instantaneous forward voltage	$I_F = 1\text{ A}$	$V_F^{(1)}$	1.5	V
	$I_F = 1.5\text{ A}$		1.6	
Maximum reverse current	$V_R = V_{RRM}$	I_R	1	μA
			50	
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$	t_{rr}	120	ns

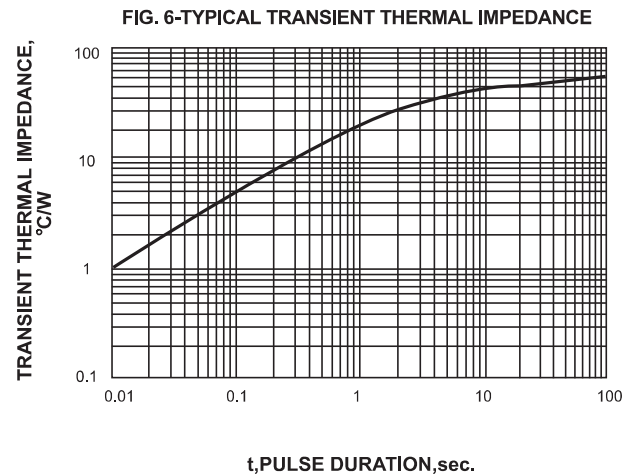
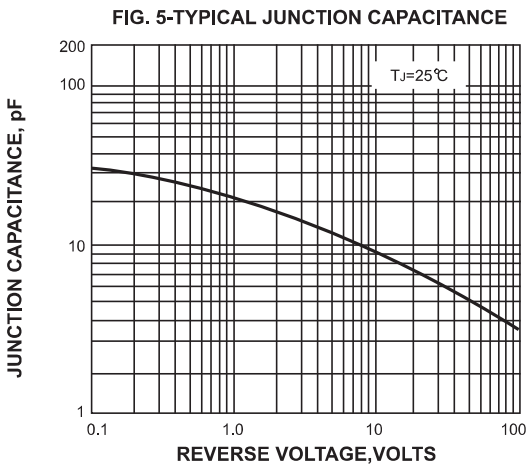
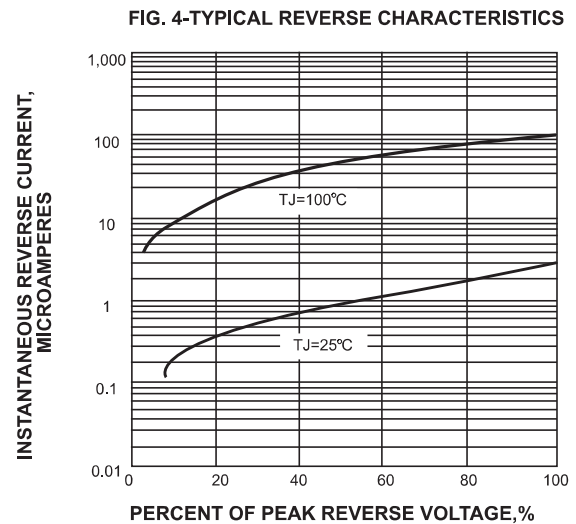
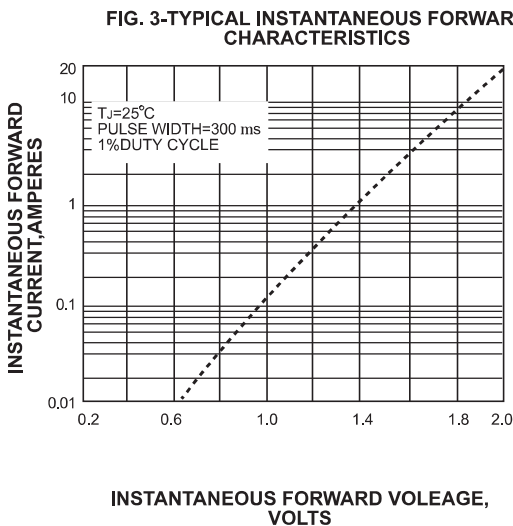
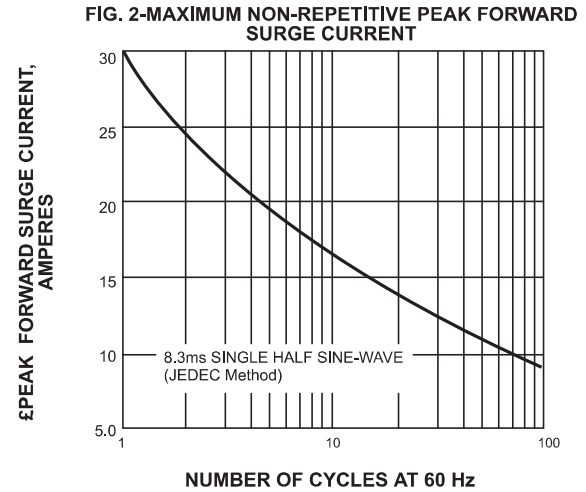
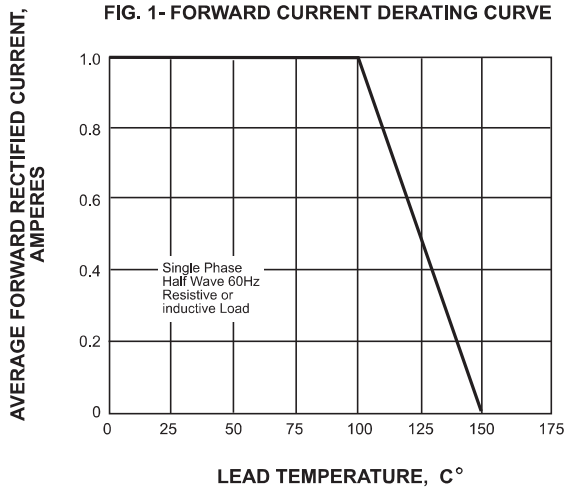
Note

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	BYG21M-E3-FS	UNIT
Typical thermal resistance, junction to lead, $T_L = \text{const.}$	$R_{\theta JL}$	50	$^{\circ}\text{C/W}$

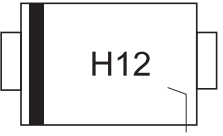
Rating and characteristic curves



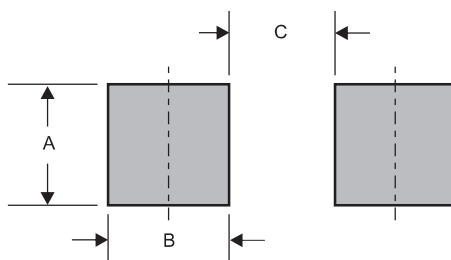
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code	Example
BYG21M-E3-FS	H12	 Marking code

Suggested solder pad layout

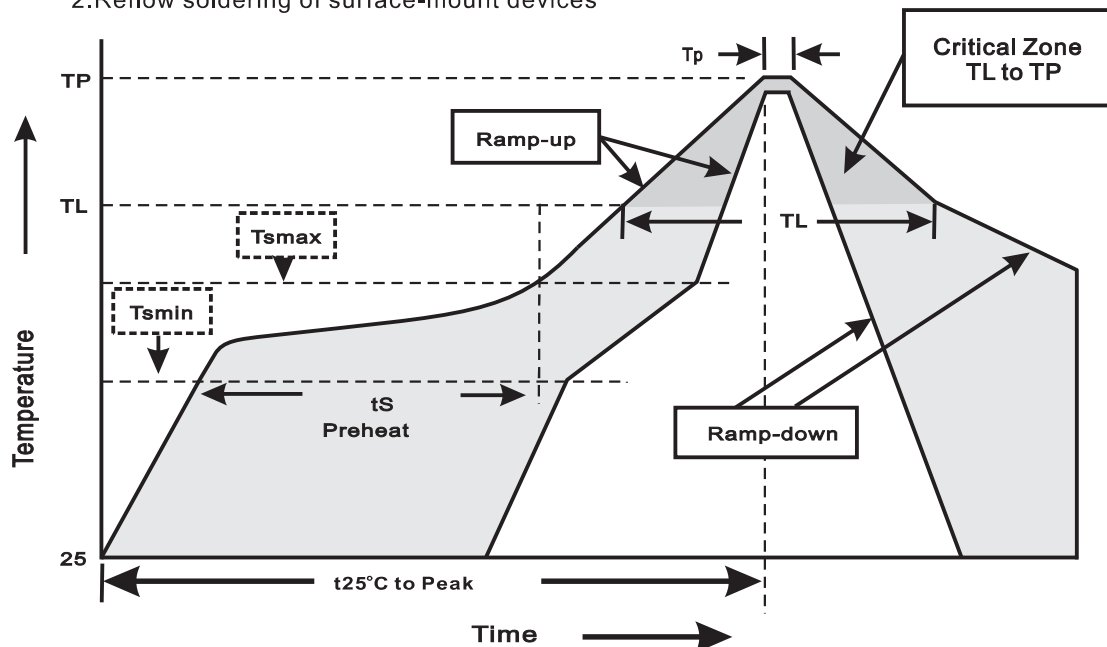


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMA	0.110 (2.80)	0.063 (1.60)	0.087 (2.20)

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{smax} to T_L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes