

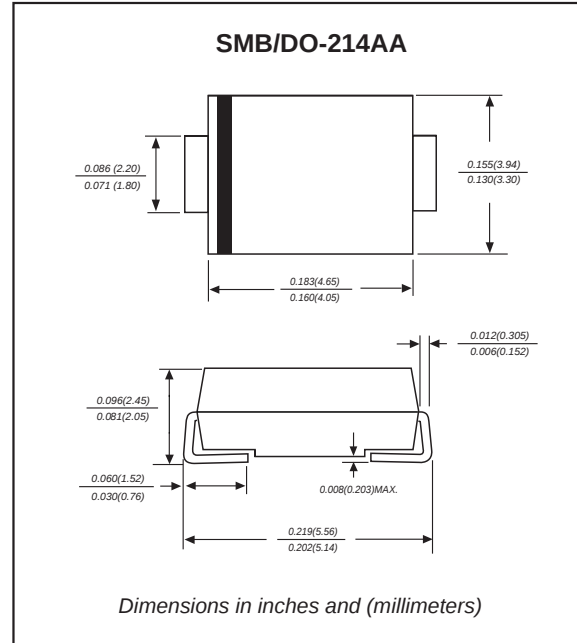
Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance
- Low profile surface mounted application in order to optimize board space
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- Guardring for overvoltage protection
- Ultra high-speed switching
- Lead-free parts meet RoHS requirements
- Halogen-free

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AA / SMB
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



Maximum ratings (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	FSTPS2L25U	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	30	Volts
Maximum RMS voltage	V_{RMS}	28	Volts
Maximum continuous reverse voltage	V_R	30	Volts
Maximum average forward rectified current	I_O	2.0	A
Non-repetitive peak forward surge current 8.3ms single half sine-wave	I_{FSM}	80	A
Typical diode junction capacitance (Note 1)	C_J	160	pF
Operating junction temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-65 to +150	$^{\circ}\text{C}$

Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	FSTPS2L25U	UNITS
Maximum instantaneous forward voltage at $I_F=2.0\text{A}$	V_F	0.43	Volts
Maximum reverse leakage current $T_J=25^{\circ}\text{C}$ at rated V_R	I_R	0.2	mA
		50	mA

Thermal characteristics

PARAMETER	SYMBOLS	FSTPS2L25U	UNITS
Typical thermal resistance junction to ambient (Note 2)	$R_{\theta JA}$	78	$^{\circ}\text{C} / \text{W}$
Typical thermal resistance junction to case (Note 2)	$R_{\theta JC}$	18	$^{\circ}\text{C} / \text{W}$

Notes 1: Measured at 1 MHz and applied reverse voltage of 4.0 VDC
2: Mounted on FR-4 PCB copper, minimum recommended pad layout

Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

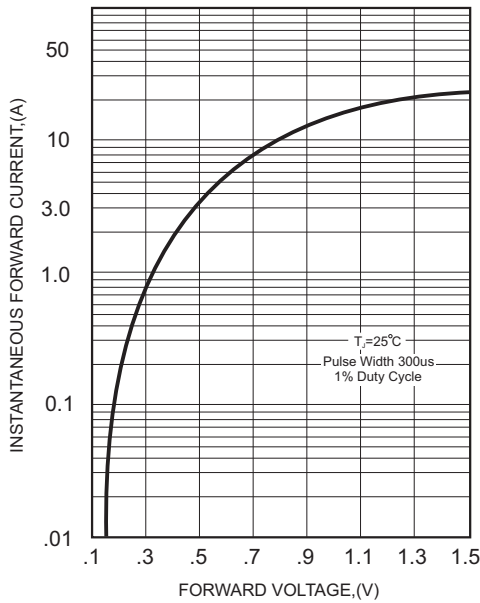


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

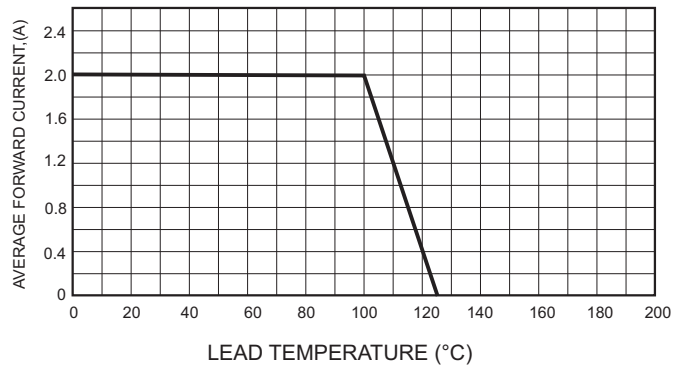


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

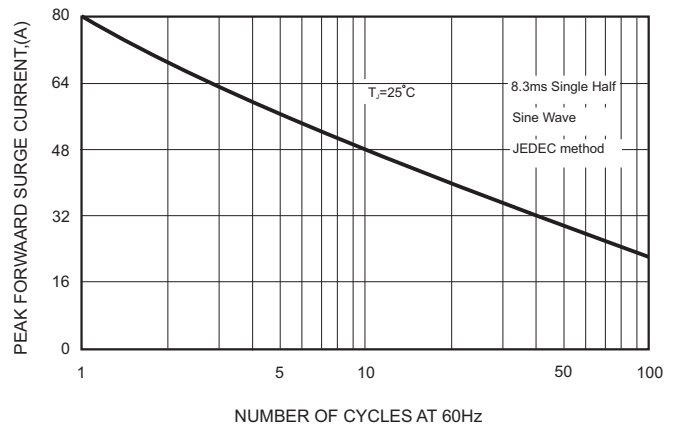


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

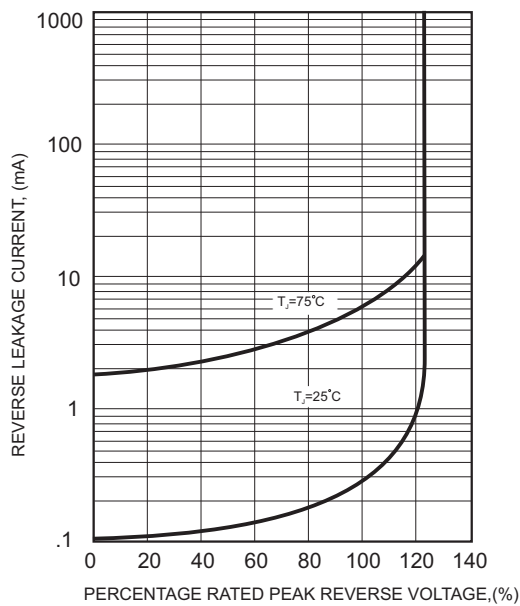
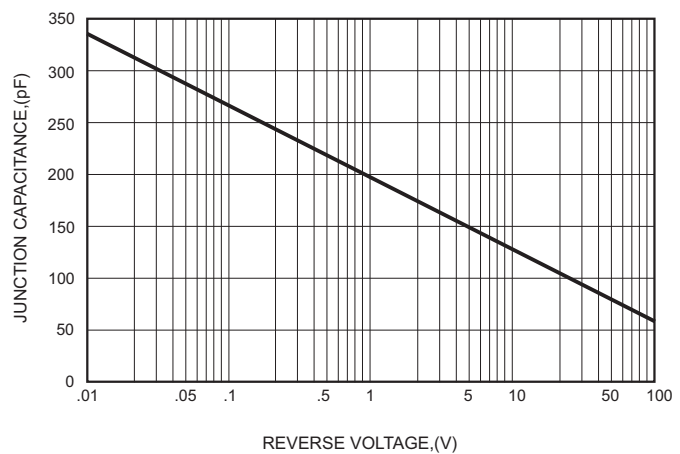
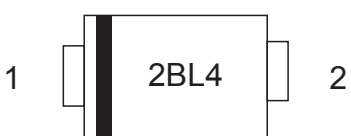


FIG.5-TYPICAL JUNCTION CAPACITANCE



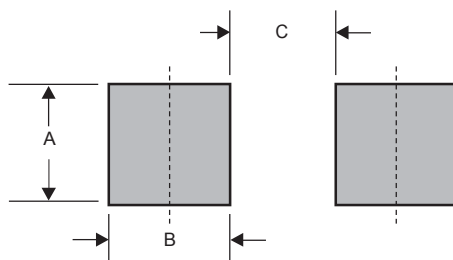
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
FSTPS2L25U	2BL4

Suggested solder pad layout

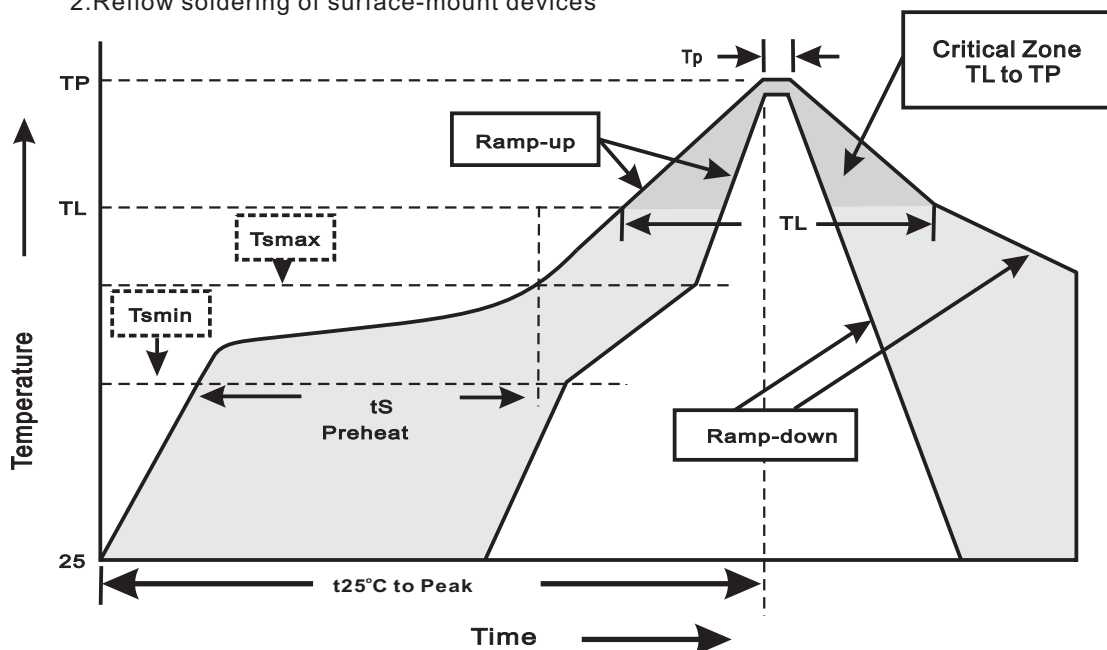


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMB	0.078 (2.00)	0.059 (1.50)	0.110 (2.80)

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)	$<3^{\circ}\text{C}/\text{sec}$
Preheat -Temperature Min(T_{min}) -Temperature Max(T_{max}) -Time(min to max)(t_s)	150°C 200°C $60\sim 120\text{sec}$
T_{max} to T_L -Ramp-upRate	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C $60\sim 260\text{sec}$
Peak Temperature(T_P)	$255^{\circ}\text{C}-0/+5^{\circ}\text{C}$
Time within 5°C of actual Peak Temperature(t_P)	$10\sim 30\text{sec}$
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$