

SOT-323 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=20V$
- $I_D=2.5A$
- $R_{DS(on)}@V_{GS}=4.5V < 68m\Omega$
- $R_{DS(on)}@V_{GS}=2.5V < 85m\Omega$
- $R_{DS(on)}@V_{GS}=1.8V < 120m\Omega$
- Advanced trench technology
- Fast Switching Speed

Applications

- Load switch
- PWM applications
- Power management

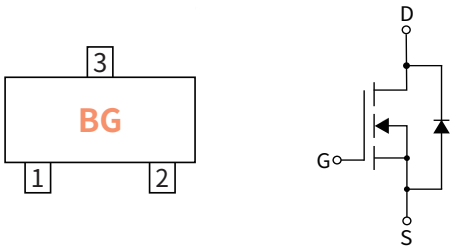
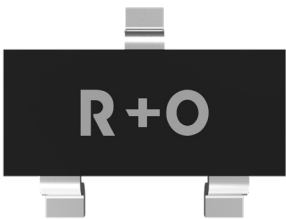
Mechanical Data

- Case: SOT-323
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Reference News

Drain-source Voltage
20 V
Drain Current
2.5 Ampere

SOT-323



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-323	R1	0.008	3000	45000	180000	7"

Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	20
Gate-source Voltage	V_{GS}	V	± 12
Drain Current	I_D	A	2.5
Drain Current-Pulsed ⁽¹⁾	I_{DM}	A	10
Total Power Dissipation @ $T_A=25^{\circ}C$	P_D	W	0.25
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	$^{\circ}C / W$	500
Junction and Storage Temperature Range	T_J, T_{STG}	$^{\circ}C$	-55 ~+150

● Static Parameter Characteristics⁽³⁾ (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	V	20	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	μA	—	—	1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	0.4	0.75	1
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=2.5A$	m Ω	—	—	68
		$V_{GS}=2.5V, I_D=2A$		—	—	85
		$V_{GS}=1.8V, I_D=1A$		—	—	120

● Dynamic Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=10V$ $V_{GS}=0V$ $f=1MHz$	pF	—	222	—
Output Capacitance	C_{oss}			—	51	—
Reverse Transfer Capacitance	C_{rss}			—	40	—

● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Turn-on Delay Time	$t_{D(on)}$	$V_{DD}=10V$ $I_D=2A$ $R_G=3\Omega$ $V_{GS}=4.5V$	ns	—	3	—
Turn-on Rise Time	t_r			—	11	—
Turn-off Delay Time	$t_{D(off)}$			—	20	—
Turn-off fall Time	t_f			—	8	—
Total Gate Charge	Q_g	$V_{DS}=10V, I_D=2A$ $V_{GS}=4.5V$	nC	—	3	—
Gate-Source Charge	Q_{gs}		nC	—	0.5	—
Gate-Drain Charge	Q_{gd}		nC	—	0.7	—

● Drian-Source Diode Characteristics

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage ⁽³⁾	V_{SD}	$I_S=2A, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current ⁽²⁾	I_S	—	A	—	—	2.5

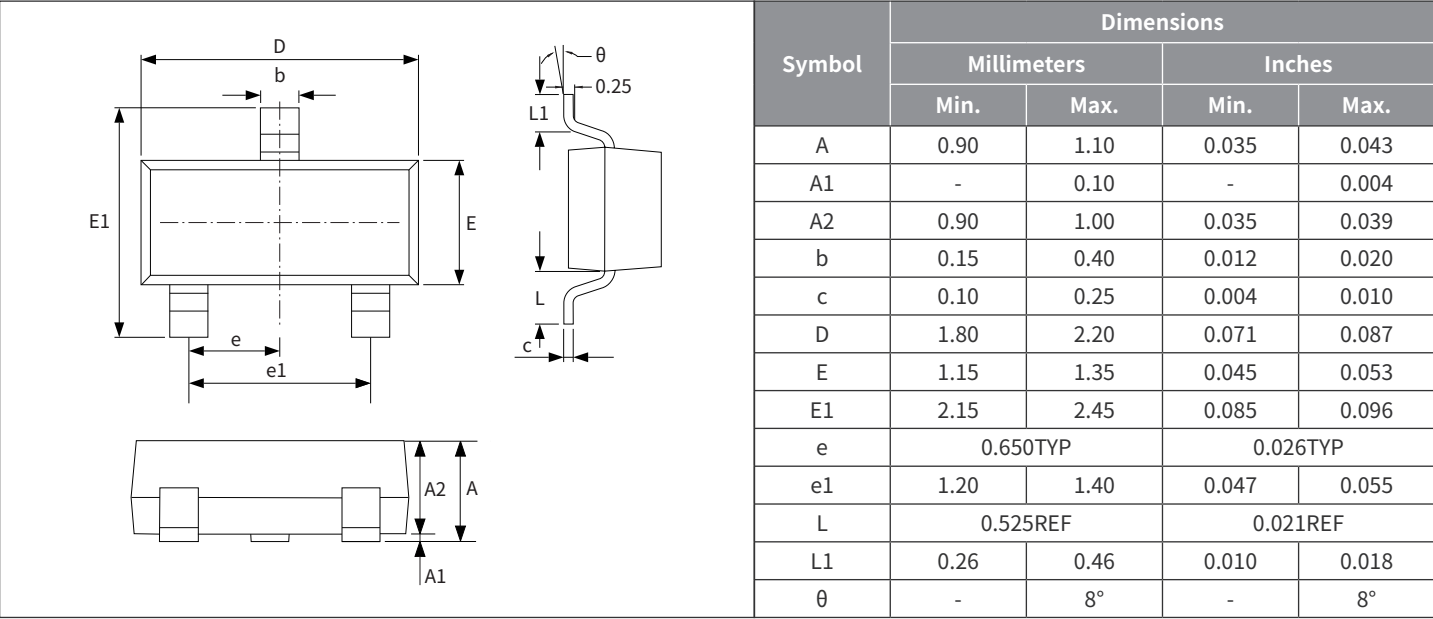
Note :

(1) Repetitive rating: pulse width limited by maximum junction temperature

(2) Surface mounted on FR4 board, $t \leq 10sec$.

(3) Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.

● Package Outline Dimensions (SOT-323)



● Suggested Pad Layout

