

SOT-323 Plastic-Encapsulate MOSFETS

Features

- $V_{DS} = -20V$
- $I_D = -1.5A$
- $R_{DS(on)}@V_{GS} = -4.5V < 125m\Omega$
- $R_{DS(on)}@V_{GS} = -2.5V < 158m\Omega$
- $R_{DS(on)}@V_{GS} = -1.8V < 210m\Omega$
- Advanced trench technology
- Fast switching speed

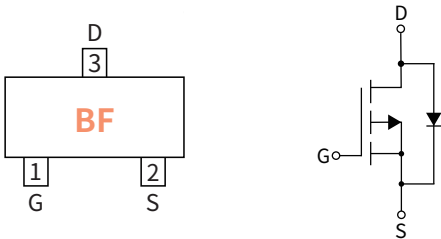
Applications

- Load switch
- PWM application
- Power management

Mechanical Data

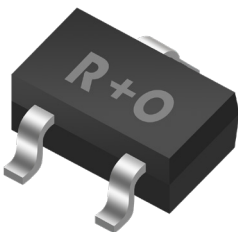
- Case: SOT-323
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Function Diagram



Drain-source Voltage
-20 V
Drain Current
-1.5 Ampere

SOT-323



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-323	R1	0.006	3000	30000	120000	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	-1.5
Pulsed Drain Current ⁽¹⁾	I_{DM}	A	-3
Total Power Dissipation	P_D	W	0.29
Thermal Resistance Junction-to-Ambient @ Steady State	$R_{\theta JA}$	$^{\circ}C / W$	431
Junction and Storage Temperature Range	T_J, T_{STG}	$^{\circ}C$	-55 ~ +150

● Static Parameter Characteristics (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 ⁽²⁾	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-0.4	-0.7	-1.0
Static Drain-Source On-Resistance ⁽²⁾	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-1.0A$	m Ω	—	93	125
		$V_{GS}=-2.5V, I_D=-0.5A$		—	116	158
		$V_{GS}=-1.8V, I_D=-0.3A$		—	152	210

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=0V$ $V_{GS}=-10V$ $f=1MHz$	pF	—	275	—
Output Capacitance	C_{oss}			—	52	—
Reverse Transfer Capacitance	C_{rss}			—	35	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q_g	$V_{GS}=-4.5V$ $V_{DS}=-10V$ $I_D=-2A$	nC	—	2.2	—
Gate-Source Charge	Q_{gs}			—	0.5	—
Gate-Drain Charge	Q_{gd}			—	0.5	—
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V$ $V_{DS}=-10V$ $I_D=-2A$ $R_{GEN}=3\Omega$	nS	—	10	—
Turn-on Rise Time	t_r			—	30	—
Turn-off Delay Time	$t_{D(off)}$			—	63	—
Turn-off fall Time	t_f			—	50	—

● Drian-Source Diode Characteristics

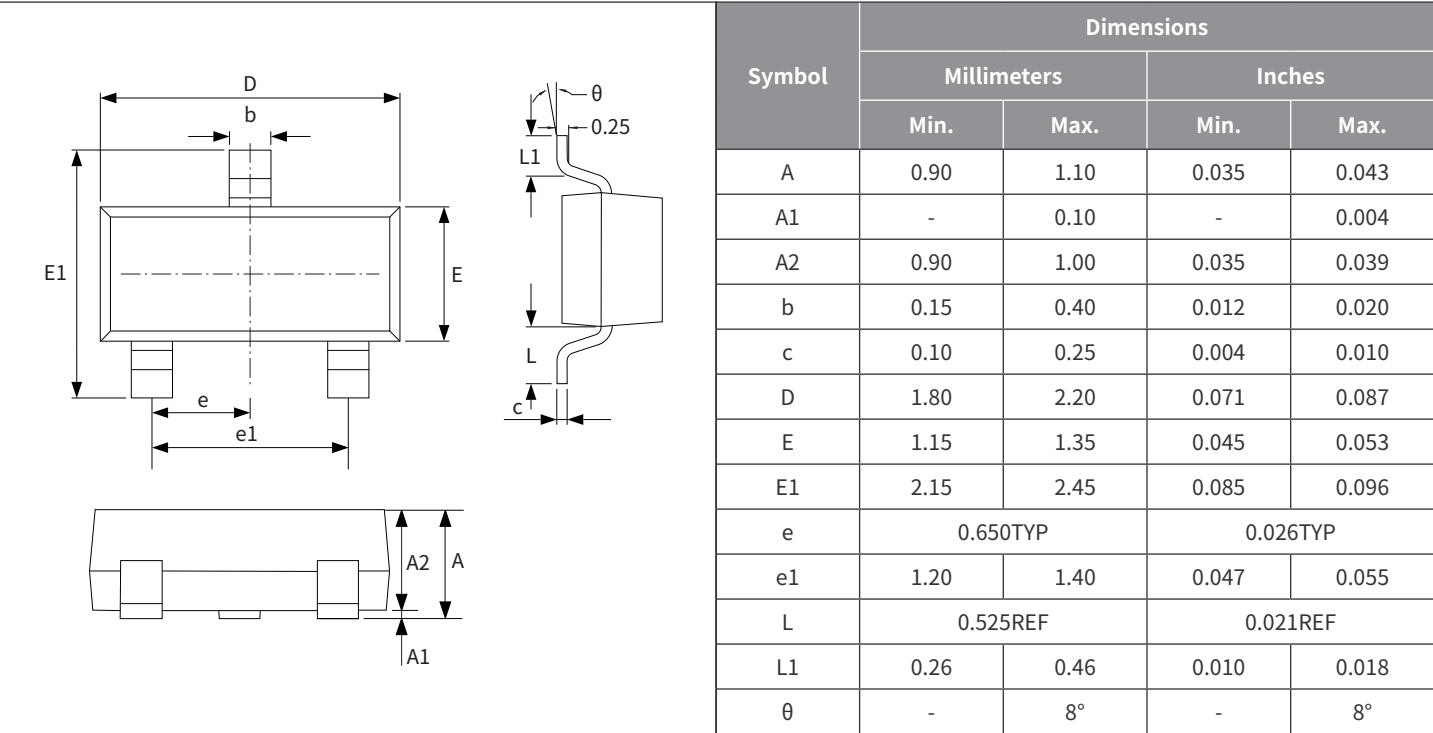
PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage ⁽²⁾	V_{SD}	$I_S=-1.5A, V_{GS}=0V$	V	—	—	-1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	-1.5

Note :

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

(2) Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

● Package Outline Dimensions (SOT-323)



● Suggested Pad Layout

