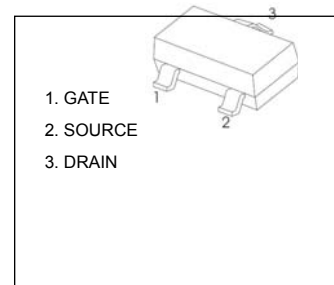


# SOT-23 Plastic-Encapsulate MOSFETS

N-Channel MOSFET

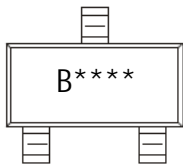
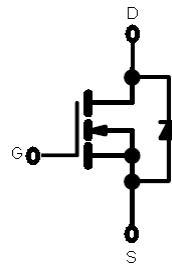
$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
30V	250mΩ@10V	1.2A
	400mΩ@4.5V	

**SOT-23**

**FEATURE**

- TrenchFET Power MOSFET

**APPLICATION**

- Load Switch for Portable Devices
- DC/DC Converter

**MARKING**

**Equivalent Circuit**

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

Parameter	Symbol	Value	Unit
Drain-Source voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	±20	
Continuous Drain Current ( $T_J=150^\circ\text{C}$ ) <sup>a,b</sup>	$I_D$	1.2	A
Pulsed Drain Current	$I_{DM}$	5	
Continuous Source Current(Diode Conduction) <sup>a,b</sup>	$I_S$	0.5	
Maximum Power Dissipation <sup>a,b</sup>	$P_D$	0.54	W
Thermal Resistance from Junction to Ambient ( $t \leq 5\text{s}$ )	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^\circ\text{C}$

**Notes :**

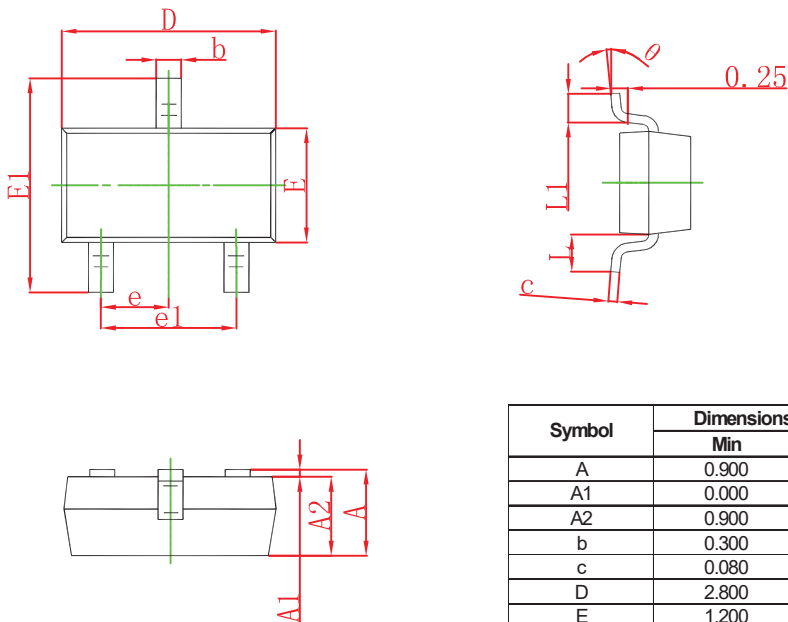
- Surface Mounted on 1" × 1" FR4 board,  $t \leq 5\text{s}$ .
- Pulse width limited by maximum junction temperature.

**MOSFET ELECTRICAL CHARACTERISTICS**
 **$T_a=25^\circ\text{C}$  unless otherwise specified**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0		3.0	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			0.5	$\mu A$
Drain-Source On-Resistance <sup>a</sup>	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 0.91A$			0.25	$\Omega$
		$V_{GS} = 4.5V, I_D = 0.46A$			0.4	
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = 4.5V, I_D = 1.2A$		7.0		S
Diode Forward Voltage	$V_{SD}$	$I_S = 1.25A, V_{GS} = 0V$		0.8	1.2	V
<b>Dynamic</b>						
Gate Charge	$Q_g$	$V_{DS} = 15V, V_{GS} = 5V, I_D = 1.2A$		3.0	4.5	nC
Total Gate Charge	$Q_{gt}$	$V_{DS} = 15V, V_{GS} = 10V, I_D = 2.5A$		6	9	
Gate-Source Charge	$Q_{gs}$			1.6		
Gate-Drain Charge	$Q_{gd}$			0.6		
Gate Resistance	$R_g$	$f = 1.0MHz$	2.5	5	7.5	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		290		pF
Output Capacitance	$C_{oss}$			63		
Reverse Transfer Capacitance	$C_{rss}$			28		
<b>Switching</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15V,$ $R_L = 15\Omega, I_D \approx 1A,$ $V_{GEN} = 10V, R_g = 6\Omega$		7	11	ns
Rise Time	$t_r$			12	18	
Turn-Off Delay Time	$t_{d(off)}$			14	25	
Fall Time	$t_f$			6	10	

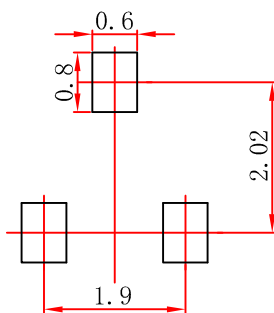
**Notes :**

 a.Pulse Test : Pulse Width $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

**SOT-23 Suggested Pad Layout**



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.