

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30V	35mΩ@10V	5.8A
	40mΩ@4.5V	

Feature

- Advanced Trench Process Technology
- Low Threshold Voltage
- Fast Switching Speed

Application

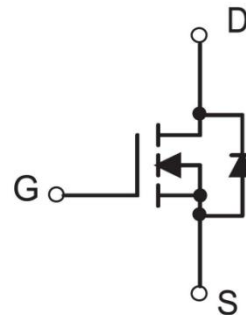
- Load Switch for Portable Devices
- Voltage controlled small signal switch

Package

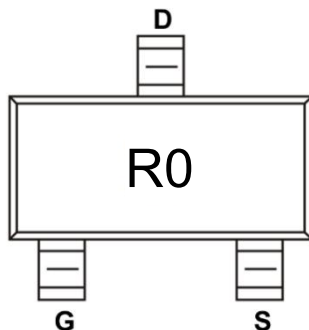


SOT-23

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	5.8	A
Peak Drain Current ¹⁾	I_{DM}	30	A
Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient ²⁾	$R_{\theta JA}$	100	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}C$

Electrical characteristics (Ta=25 °C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.7		1.4	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5.8A$		27	35	m Ω
		$V_{GS} = 4.5V, I_D = 5A$		29	40	
Dynamic characteristics³⁾						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		1050		pF
Output Capacitance	C_{oss}			99		
Reverse Transfer Capacitance	C_{rss}			77		
Total Gate Charge	Q_g	$V_{DS} = 15V, V_{GS} = 4.5V, I_D = 5.8A$		11		nC
Gate-Source Charge	Q_{gs}			1.6		
Gate-Drain Charge	Q_{gd}			2.8		
Turn-on delay time	$t_{d(on)}$	$V_{DS} = 15V, V_{GS} = 10V, R_L = 2.7\Omega, R_{GEN} = 3\Omega$		5		nS
Turn-on rise time	t_r			7		
Turn-off delay time	$t_{d(off)}$			40		
Turn-off fall time	t_f			6		
Source-Drain Diode characteristics						
Diode Forward voltage	V_{SD}	$V_{GS} = 0V, I_S = 1A$			1.2	V

Notes:

- 1) Pulse width $\leq 100\mu s$, duty cycle $\leq 1\%$, limited by T_{jmax} .
- 2) Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.
- 3) Guaranteed by design, not subject to production

Typical Characteristics

Fig. 1 - Output Characteristics

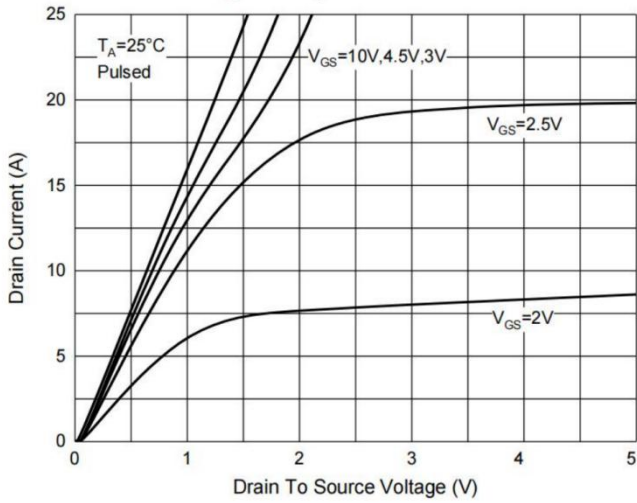


Fig. 2 - Transfer Characteristics

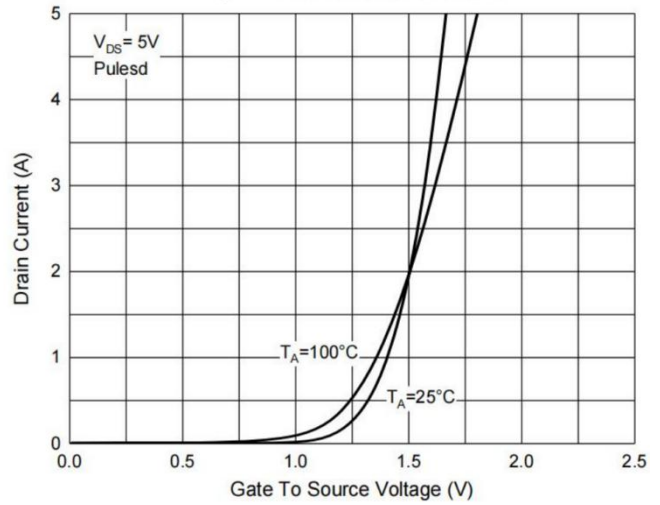


Fig. 3 - $R_{DS(ON)} - I_D$

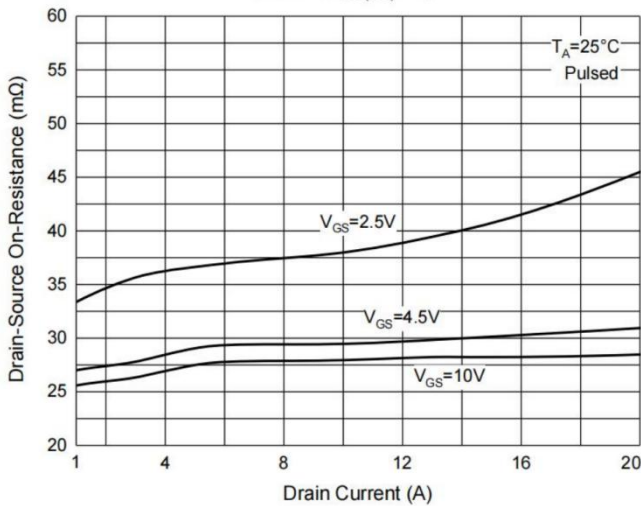


Fig. 4 - $R_{DS(ON)} - V_{GS}$

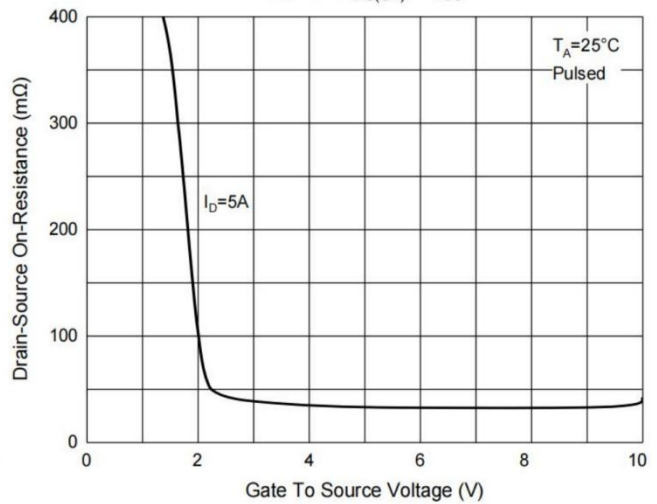


Fig. 5 - $I_S - V_{SD}$

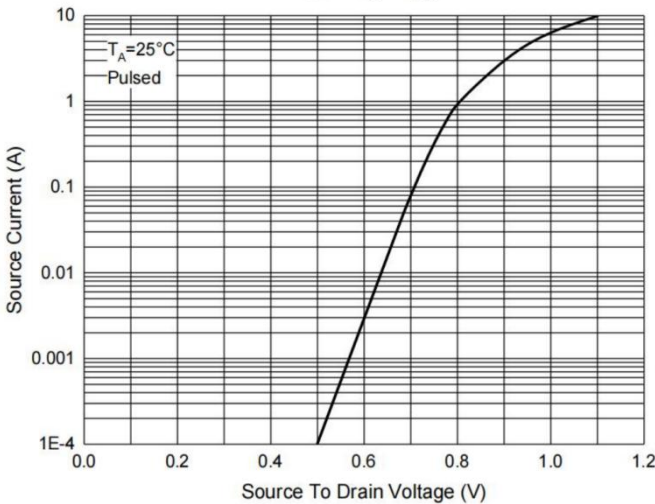
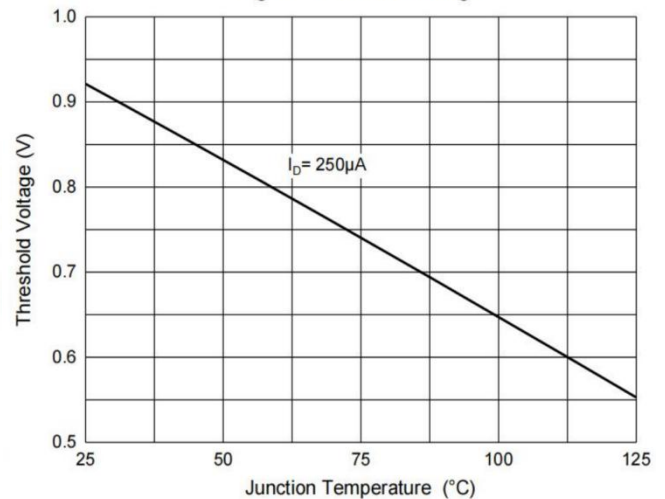
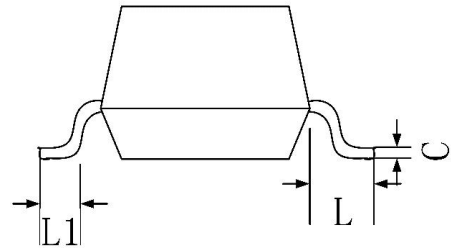
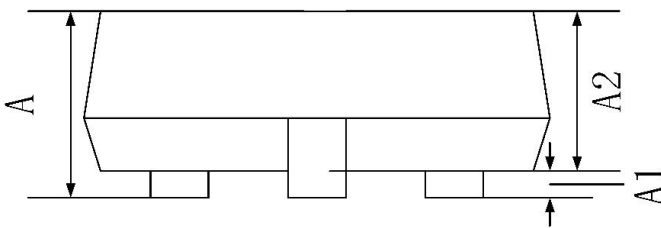
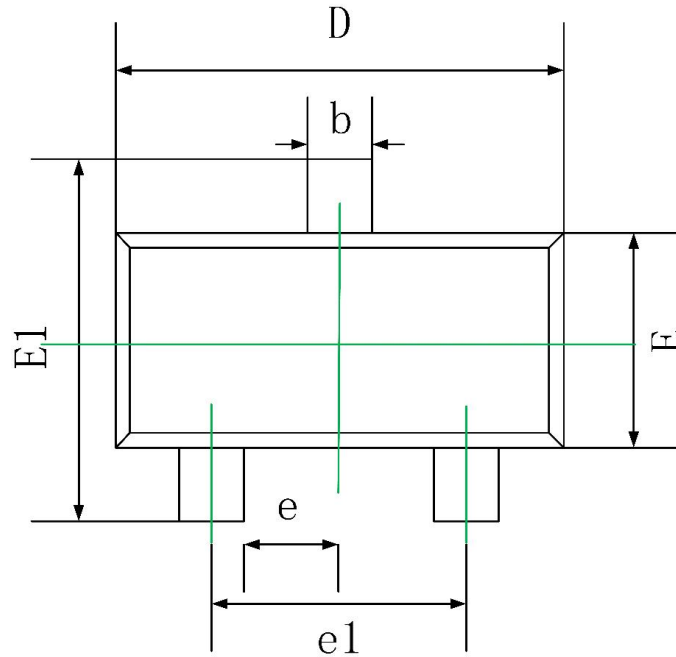


Fig. 6 - Threshold Voltage



SOT-23 Package Information



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	0.200	0.003	0.008
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 REF.		0.037 REF.	
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