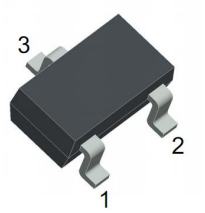
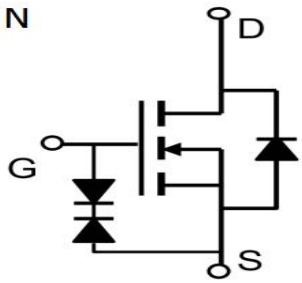
N-Channel Enhancement Mode Field Effect Transistor	SOT-23 Plastic-Encapsulate MOSFETS

SOT-23



1.GATE
2.SOURCE
3.DRAIN

Equivalent Circuit:



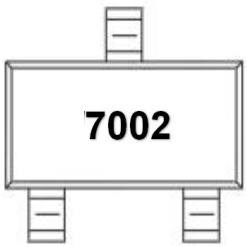
Features

※ High density cell design for low RDS(ON)
※ Voltage controlled small signal switch
※ Rugged and reliable
※ High saturation current capability
※ ESD Protected

Application

※ Load Switch for Portable Devices
※ DC/DC Converter

MARKING:



Maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	**VDS**	60	V
Gate-Source Voltage	**VGS**	±20	V
Continuous Drain Current	**ID**	0.115	A
Power Dissipation	**PD**	0.225	W
Thermal Resistance from Junction to Ambient	**RθJA**	556	℃/W
Junction Temperature	**TJ**	150	℃
Storage Temperature	**TSTG**	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

Electrical Characteristics (Ta=25 ℃ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-source breakdown voltage	**V(BR) DSS**	VGS = 0V, ID =250μA	60			V
Gate threshold voltage	**VGS(th)**	VDS =VGS, ID =250μA	1		3	V
Gate-source leakage current	**IGSS**	VDS =0V, VGS =±20 V			±10	μA
Zero gate voltage drain current	**IDSS**	VDS =60V, VGS = 0V			1	μA
On-state Drain Current	**ID(ON)**	VGS =10V, VDS =7V	500			mA
Drain-source on-resistance	**RDS(on)**	VGS =10V, ID =500mA		2	5	Ω
		VGS =4.5V, ID =50mA		2.3	7	Ω
Forward tranconductance	**gFS**	VDS =10V, ID =200mA	80			mS
Drain-source on-Voitage	**VGS(on)**	VGS =10V, ID =500mA			3.75	V
		VGS =4.5V, ID =50mA			0.375	V
Dioge forward voitage	**VSD**	Is=115mA, VGS=0V	0.55		1.5	V
Input capacitance	**Ciss**	VDS =25V, VGS =0V, f =1MHz			50	pF
Output capacitance	**Coss**				25	pF
Reverse transfer capacitance	**Crss**				5	pF
Turn-on time	**td(on)**	VDD=25V,RL=50Ω, ID=500mA VGEN=10V, RG=2.7Ω			20	ns
Turn-off time	**td(off)**				40	ns

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

TYPICAL ELEC TRICAL AND THERMAL CHARACTERISTICS

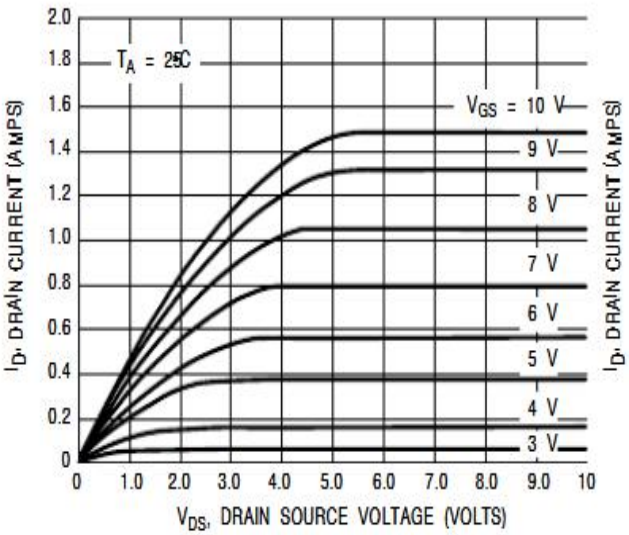


Figure 1. Ohmic Region

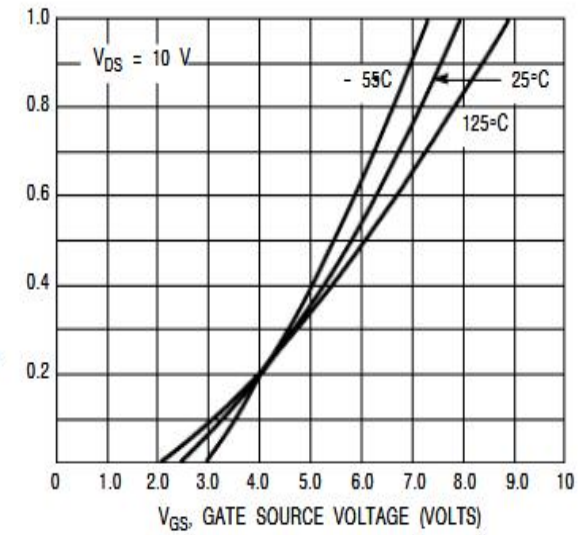


Figure 2. Transfer Characteristics

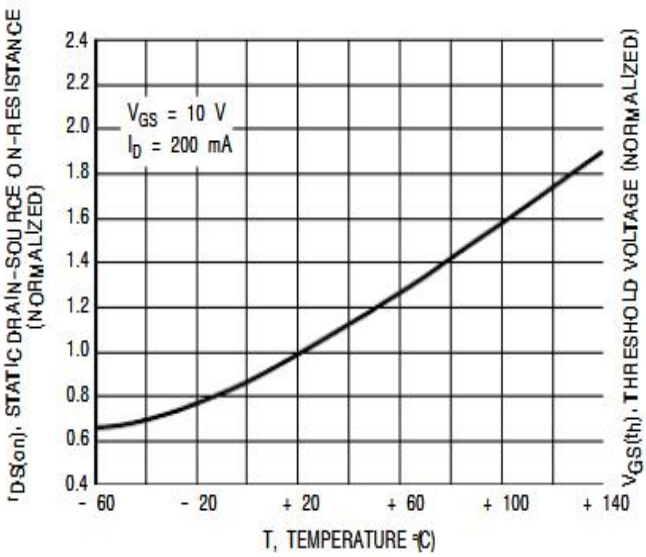


Figure 3. Temperature versus Static Drain–Source On–Resistance

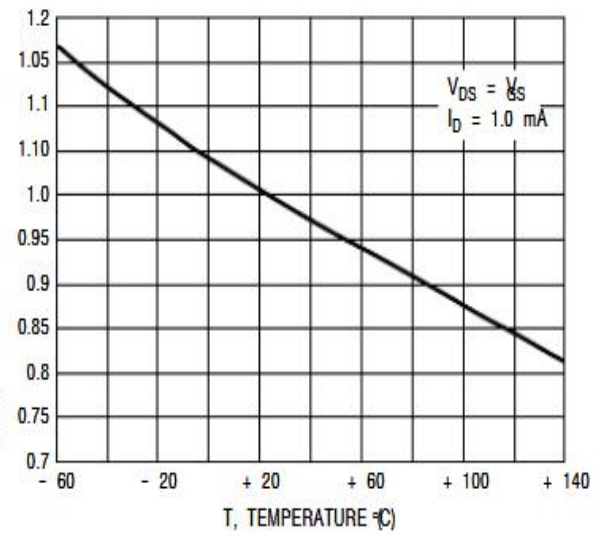
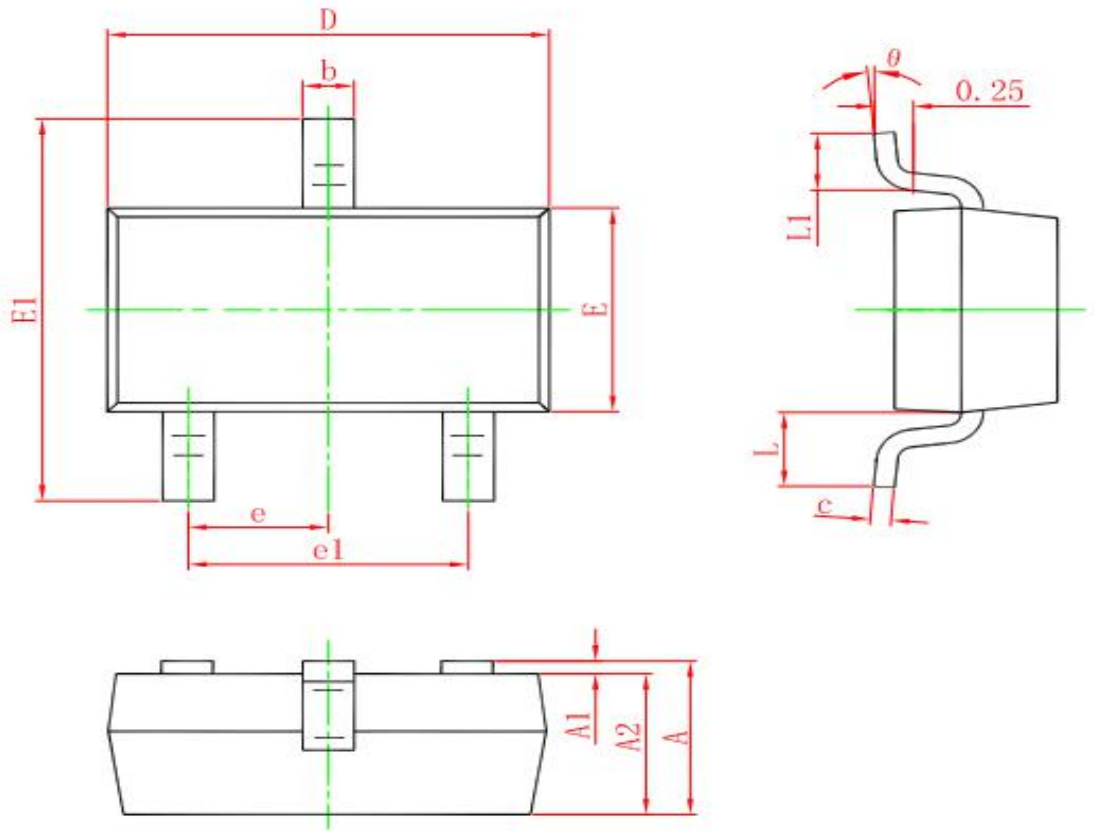


Figure 4. Temperature versus Gate Threshold Voltage

SOT-23 PACKAGE OUTLINE DIMENSIONS



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°