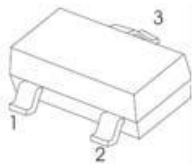
Plastic-Encapsulate MOSFETS

P-Channel 20-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-20V	50mΩ@-4.5V	-4A
	60mΩ@-2.5V	
	100mΩ@-1.8V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

FEATURE

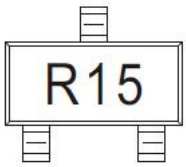
⌘ Excellent $R_{DS(ON)}$, low gate charge,low gate voltages

⌘ ESD Protected up to 2kV

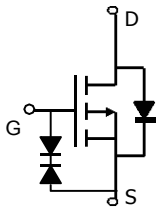
APPLICATION

⌘ Load switch and in PWM applicatopns

MARKING



Equivalent Circuit



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8	
Continuous Drain Current (t≤10s)	I_D	-4.0	A
Maximum Power Dissipation (t≤10s)	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Operating Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

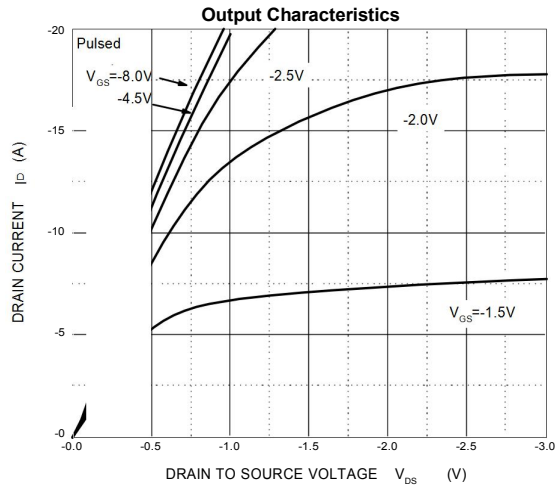
T_a=25℃ unless otherwise specified

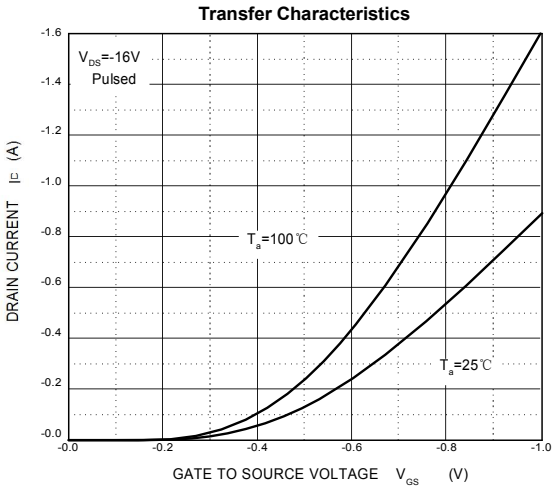
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static Parameters						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.3	-0.56	-1	
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±8V			±10	μA
		V_{DS} =0V, V_{GS} =±4.5V			±1	
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V, V_{GS} =0V			-1	
Drain-source on-state resistance(note1)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-4A		0.037	0.050	Ω
		V_{GS} =-2.5V, I_D =-4A		0.045	0.060	
		V_{GS} =-1.8V, I_D =-2A		0.080	0.100	
Forward transconductance(note2)	g_{FS}	V_{DS} =-5V, I_D =-4A	8			S
Body diode voltage(note2)	V_{SD}	I_S=-1A,V_{GS} =0V			-1	V
Dynamic Parameters (note3)						
Input capacitance	C_{iss}	V_{DS} =-10V,V_{GS} =0V,f =1MHz		1450		pF
Output capacitance	C_{oss}			205		
Reverse transfer capacitance	C_{rss}			160		
Gate resistance	R_g	V_{DS} =0V,V_{GS} =0V,f =1MHz		6.5		Ω
Switching Parameters						
Total gate charge	Q_g	V_{DS} =-10V,V_{GS} =-4.5V,I_D =-4A		17.2		nC
Gate-Source charge	Q_{gs}			1.3		
Gate-drain charge	Q_{gd}			4.5		
Turn-on delay time (note3)	$t_{d(on)}$	V_{DS}=-10V, V_{GS}=-4.5V R_{GEN} =3Ω, R_L=2.5Ω,		9.5		ns
Turn-on rise time(note3)	t_r			17		
Turn-off delay time(note3)	$t_{d(off)}$			94		
Turn-off fall time(note3)	t_f			35		

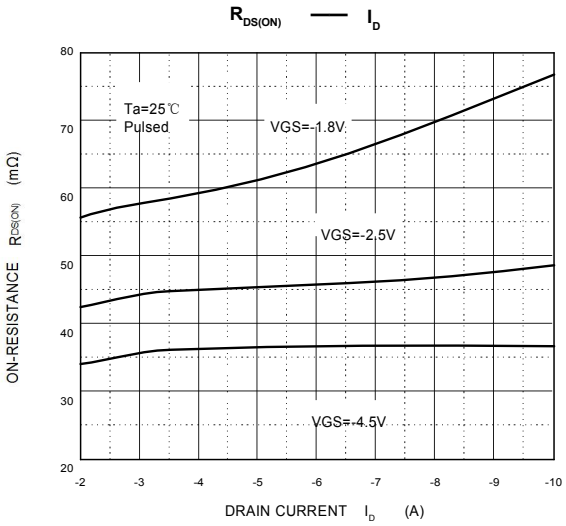
Notes:

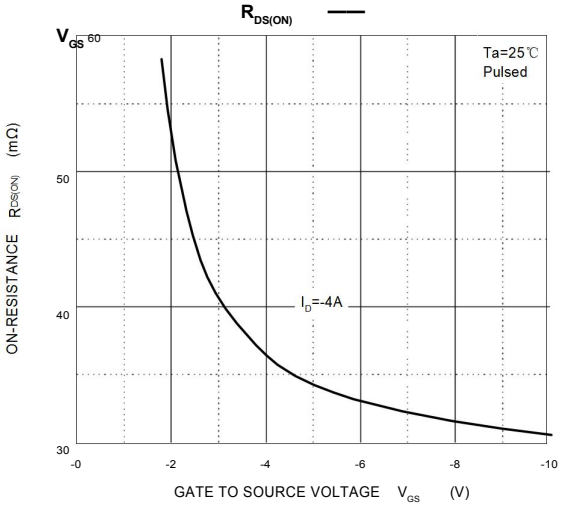
1. Repetitive rating,pulse width limited by junction temperature.
2. Pulse Test : Pulse width≦300μs, duty cycle≦2%.
3. These parameters have no way to verify.

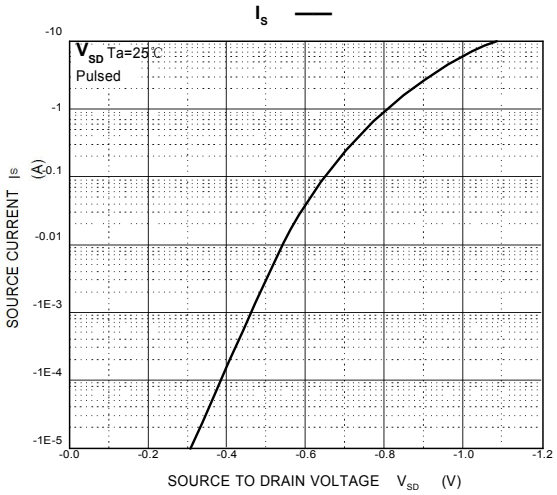
Typical Characteristics

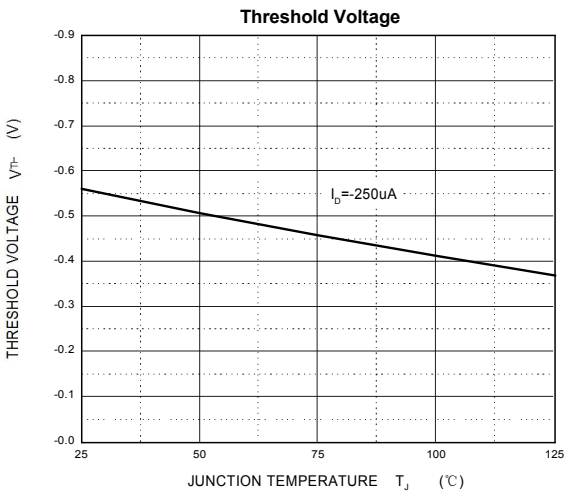






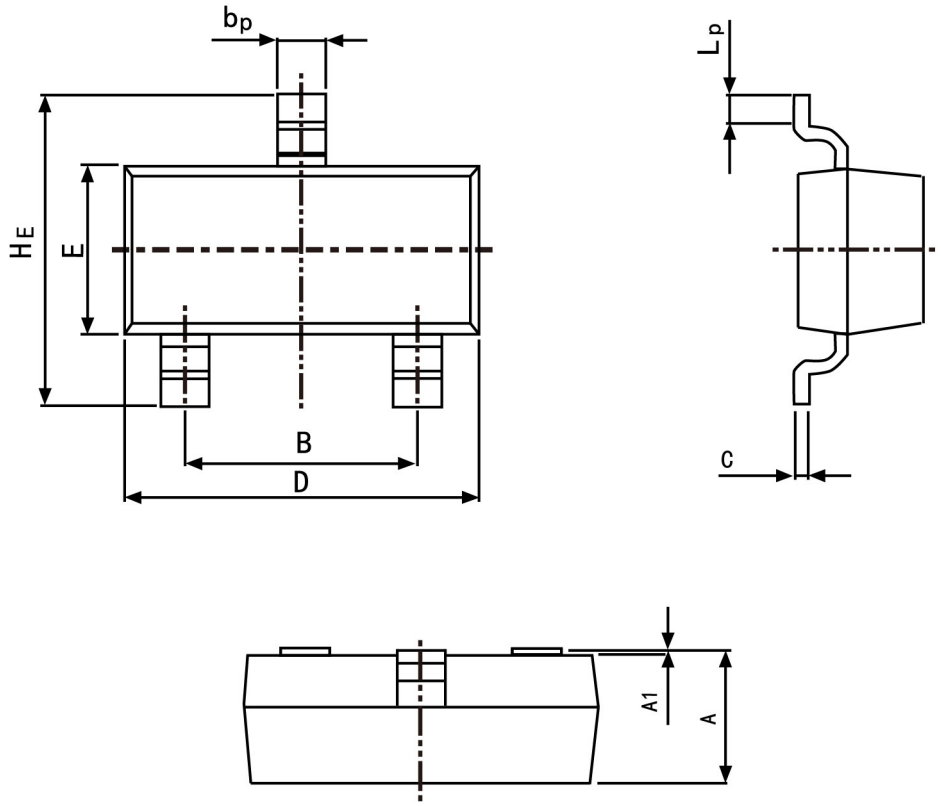






PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-23**



Symbol	Dimension in Millimeters	
	Min	Max
A	0.95	1.40
B	1.78	2.04
bp	0.35	0.50
C	0.08	0.19
D	2.70	3.10
E	1.20	1.65
HE	2.20	3.00
A1	0.100	0.013
Lp	0.20	0.50