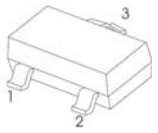
P-Channel 20-V(D-S) MOSFET

SOT-23 Plastic-Encapsulate MOSFETS

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-20V	48mΩ@-4.5V	-4A
	65mΩ@-2.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

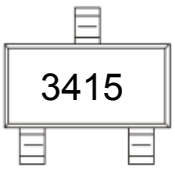
FEATURE

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

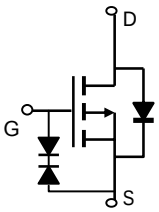
APPLICATION

- 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	℃
ESD	> 2.0KV (HBM)		

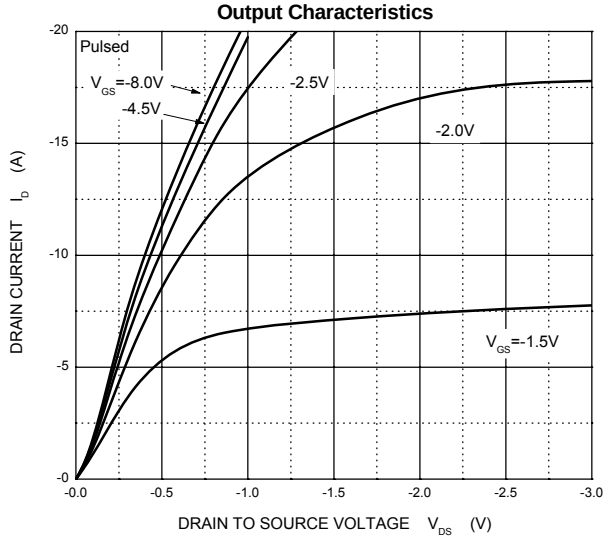
T_a=25℃ unless otherwise specified

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	-0.34	-0.67	-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} =-20V, V_{GS} =0V			-1	
Drain-source on-state resistance(note1)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-4A		0.038	0.048	Ω
		V_{GS} =-2.5V, I_D =-3A		0.048	0.065	
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		

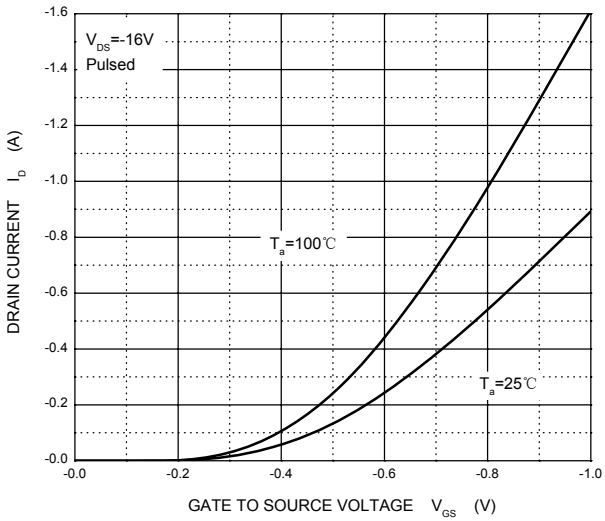
Notes:

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.

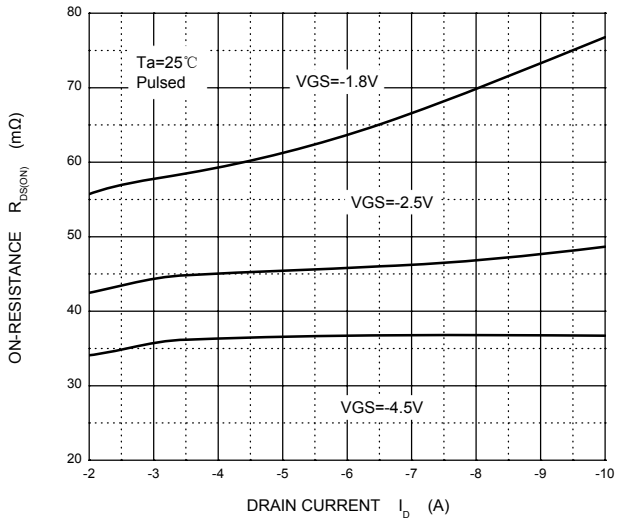
Output Characteristics



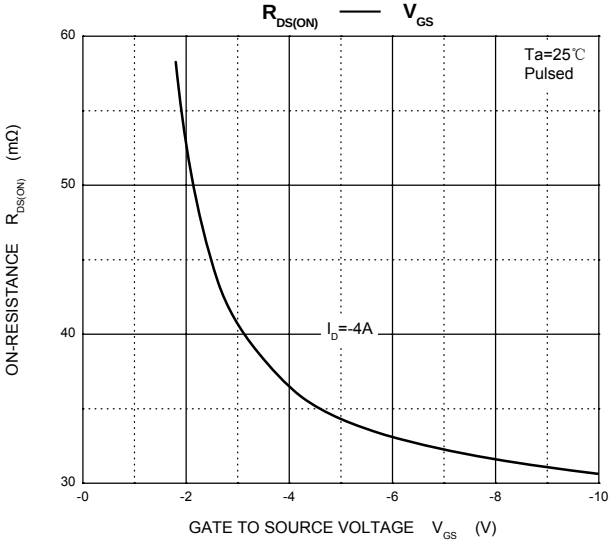
Transfer Characteristics



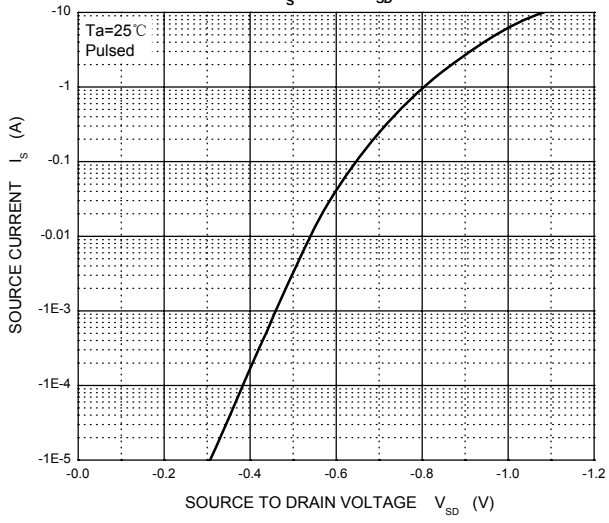
RDS(ON) —— ID



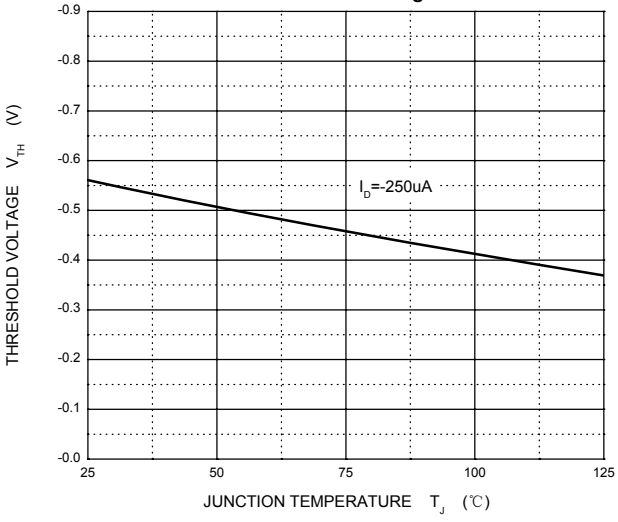
RDS(ON) —— VGS

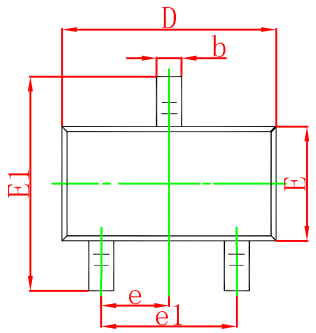


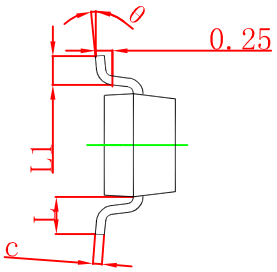
IS —— VSD

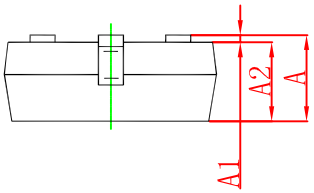


Threshold Voltage



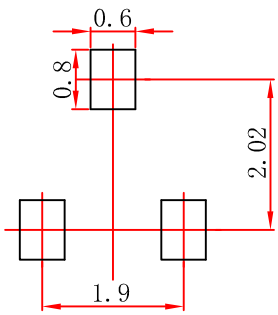






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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:± 0.05mm.
3.The pad layout is for reference purposes only.