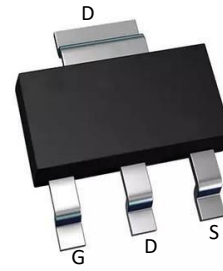


N-Channel Enhancement Mode Field Effect Transistor

Product Summary

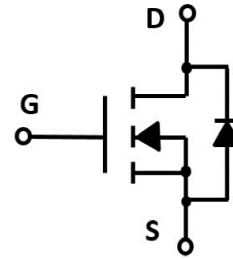
V_{DS}	100	V
$R_{DS(ON)}@10V,MAX$	95	m Ω
I_D	10	A



FEATURES

- Trench Power MV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

SOT-223

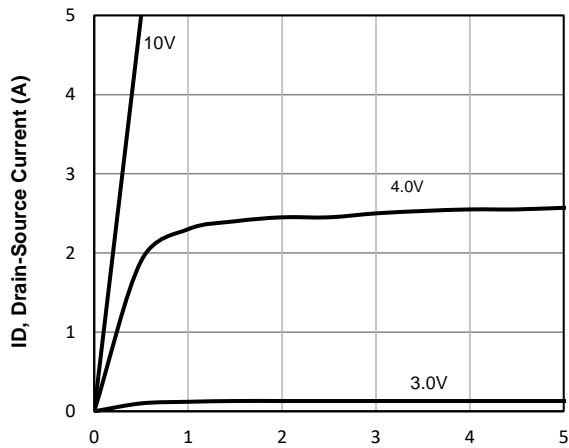


Absolute Maximum Ratings (TA=25°C unless otherwise noted)

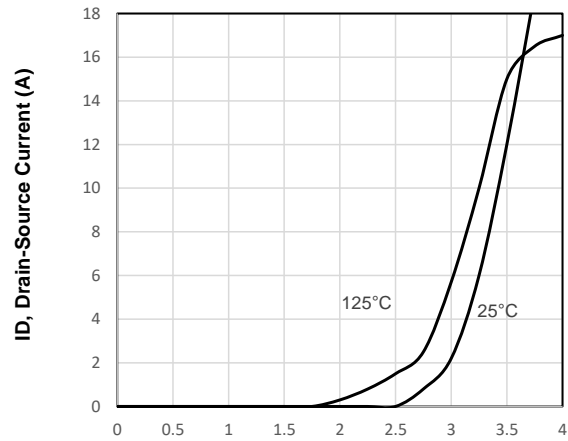
Symbol	Parameter	Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)			
V_{GS}	Gate-Source Voltage	± 20	V
$V_{(br)DSS}$	Drain-Source Breakdown Voltage	100	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_c=25^\circ\text{C}$ 15	A
Mounted on Large Heat Sink			
I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ 35	A
I_D	Continuous Drain Current@GS=10V	$T_c=25^\circ\text{C}$ 10	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 3.1	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient>(*1 in2 Pad of 2-oz Copper), Max.)	40	°C/W

Electrical Characteristics (T_J=25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V ID=250μA	100	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	VDS=100V, VGS=0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	VDS=VGS, ID=250μA	1	1.9	3	V
R _{DS(on)}	Drain-Source On-State Resistance	VGS=10V, ID=10A	--	80	95	mΩ
		VGS=4.5V, ID=8A	--	93	120	
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	VDS=50V, VGS=0V, f=1MHz	--	1070	--	pF
C _{OSS}	Output Capacitance		--	33	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	30	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	VDS=50V, ID=10A, VGS=10V	--	26	--	nC
Q _{gs}	Gate Source Charge		--	5.4	--	nC
Q _{gd}	Gate Drain Charge		--	5.8	--	nC
t _{d(on)}	Turn-on Delay Time	VDD=50V, ID=10A, VGS=10V, RG=3Ω	--	7	--	nS
t _r	Turn-on Rise Time		--	24	--	nS
t _{d(off)}	Turn-Off Delay Time		--	25	--	nS
t _f	Turn-Off Fall Time		--	31	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _j =25°C, I _s =15A,	--	0.9	1.2	V

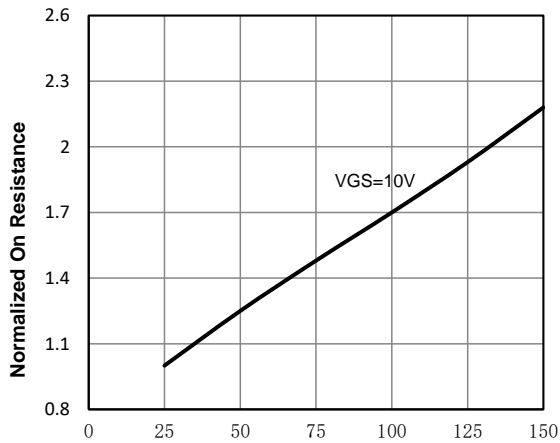
D Typical Operating Characteristics



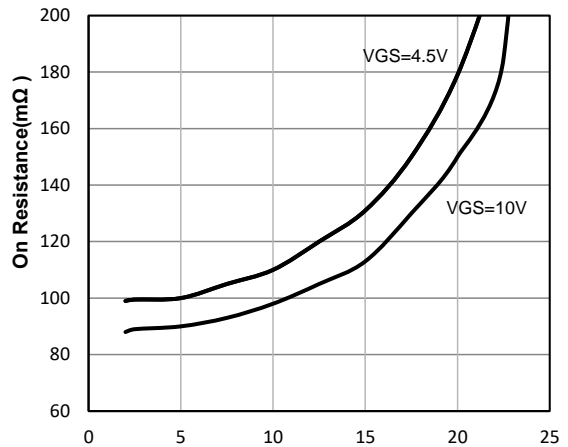
V_{DS}, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



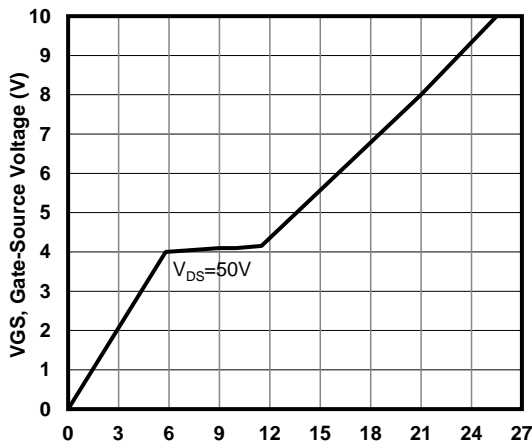
V_{GS}, Gate -Source Voltage (V)
Fig2. Typical Transfer Characteristic



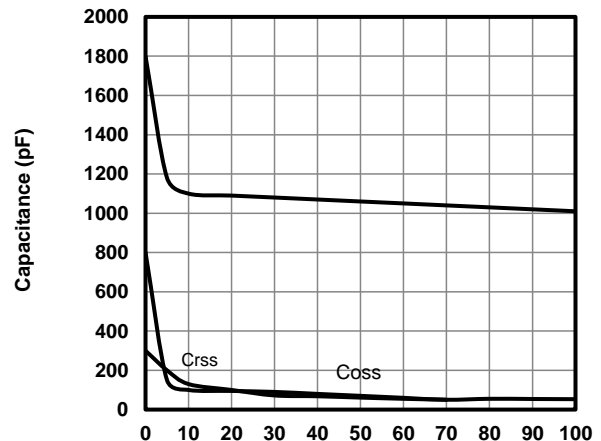
T_j - Junction Temperature (°C)
Fig3. Normalized On-Resistance Vs. Temperature



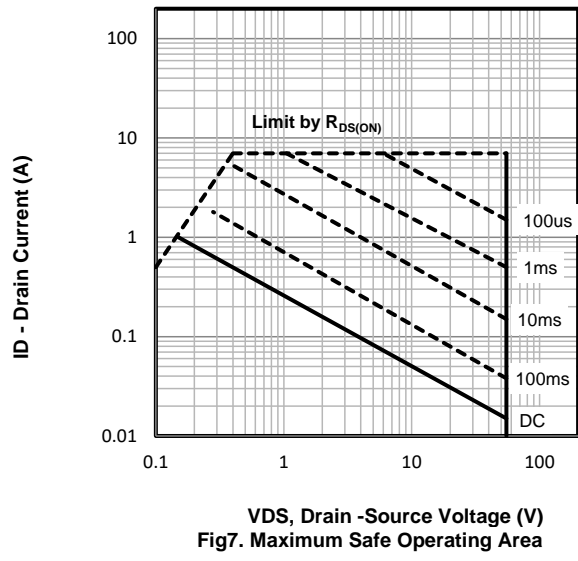
I_D, Drain-Source Current (A)
Fig4. On-Resistance Vs. Drain-Source Current



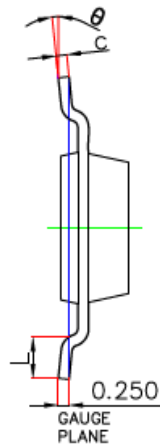
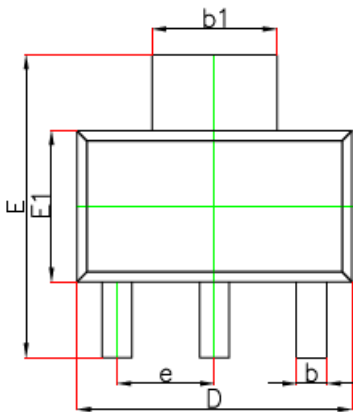
Q_g -Total Gate Charge (nC)
Fig5. Typical Gate Charge Vs. Gate-Source Voltage



V_{DS}, Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs. Drain-Source



SOT-223 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	—	1.800	—	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b_1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	—	0.030	—
θ	0°	10°	0°	10°

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