20V N-Channel Enhancement Power MOSFET

V_{DS}	20V
I_D	5.5A
$R_{DS(ON)_MAX}$ @V_{GS}=4.5V	32mΩ

DESCRIPTION：

·Advanced Trench Technology

·RoHS and Reach Compliant

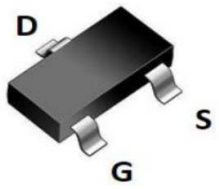
·Halogen and Antimony Free

·Moisture Sensitivity Level 1

TYPICAL APPLICATIONS：

·DC/DC Converter

·Load Switch for Portable Devices



SOT-23

MAXIMUM RATINGS (at T_C = 25 °C, unless otherwise specified)

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	5.5	A
Drain Current-Pulsed	I_{DM}	30	A
Maximum Power Dissipation	P_D	0.9	W
Junction Temperature	T_J	150	℃
Junction & Storage temperature Range	T_{STG}	-55~+150	℃

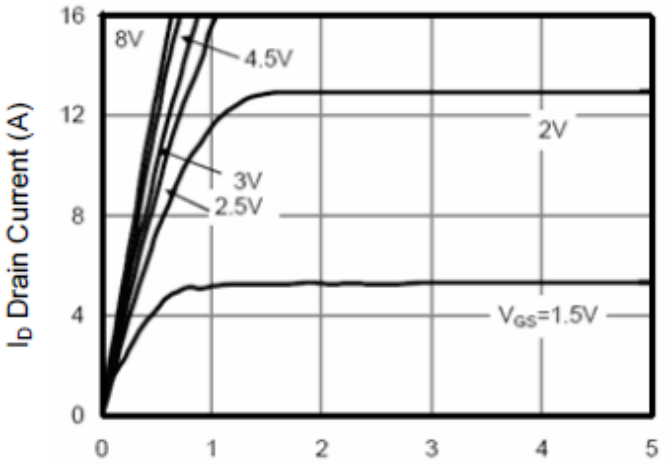
THERMAL CHARACTERISTICS

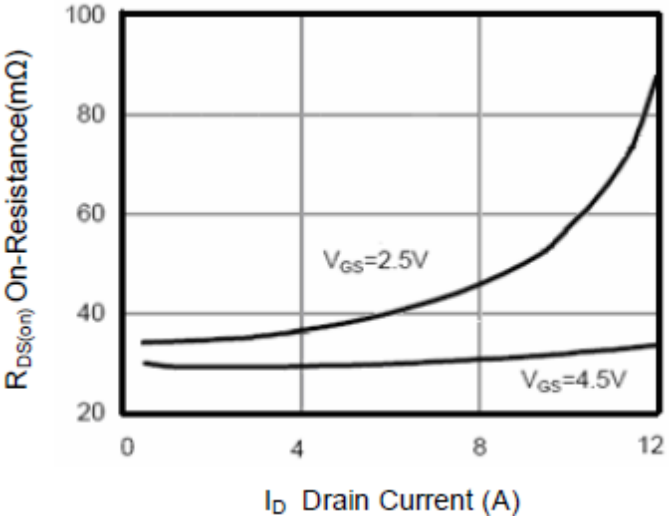
Characteristic	Condition	Symbol	Value	Unit
Thermal resistance,	Junction to Ambient	$R_{\theta JA}$	139	℃/W

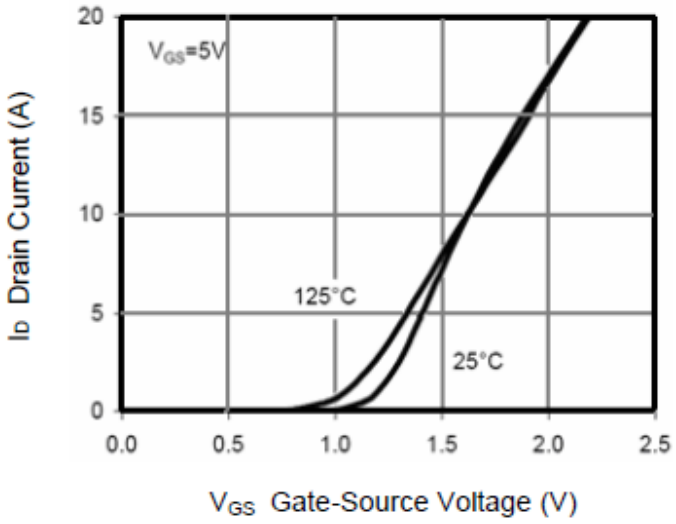
ELECTRICAL CHARATERISTICS (at T_J = 25 °C, unless otherwise specified)

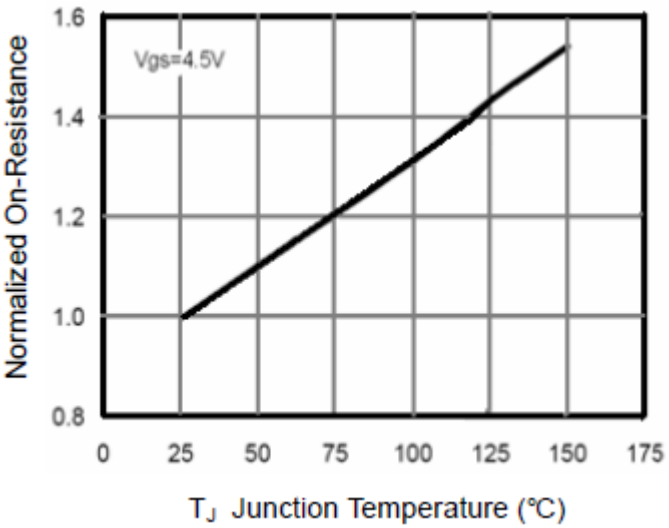
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage VGS = 0V, ID = 250uA	$V_{(BR)DSS}$	20			V
Zero Gate Voltage Drain Current VDS =20 V, VGS = 0 V	I_{DSS}			1	uA
Gate-Source Leakage Current VGS = ±10V, VDS = 0V	I_{GSS}			±100	nA
Gate-Source threshold voltage VDS = VGS, ID = 250uA	$V_{GS(th)}$	0.45	0.7	1	V
Drain-Source On-State Resistance VGS = 4.5V, ID = 3A VGS = 2.5V, ID = 2A	$R_{DS(on)}$		23 32	32 40	mΩ
Forward Transconductance VDS = 5V, ID =1A	g_{FS}		5		S
Input capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{iss}		260		pF
Output capacitance f=1MHz, VDS=10V, VGS=0 V	C_{oss}		48		pF
Reverse transfer capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{rss}		27		pF
Total Gate Charge VDS= 10V, ID= 3A, VGS= 4.5V	Q_G		2.9		nC
Gate to Source Charge VDS= 10V, ID= 3A, VGS= 4.5V	Q_{GS}		0.4		nC
Gate to Drain Charge VDS= 10V, ID= 3A, VGS= 4.5V	Q_{GD}		0.6		nC
Turn-on delay time VDD= 10V, VGS= 4.5V, R_{GEN}=6Ω, R_L=3.3Ω	$t_{d\ (ON)}$		2.5		ns
Rise time VDD= 10V, VGS= 4.5V, R_{GEN}=6Ω, R_L=3.3Ω	tr		3.2		ns
Turn-off delay time VDD= 10V, VGS= 4.5V, R_{GEN}=6Ω, R_L=3.3Ω	$t_{d\ (OFF)}$		21		ns
Fall time VDD= 10V, VGS= 4.5V, R_{GEN}=6Ω, R_L=3.3Ω	tf		3		ns
Maximum Pulsed Body Diode Forward Current	IS			5.5	A
Diode Forward Voltage VGS = 0V, I_S = 5.5A	V_{SD}			1.2	V

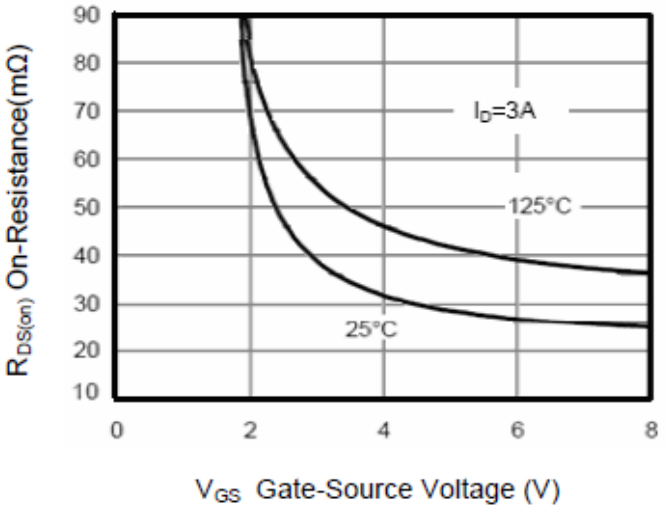
Typical Performance Characteristics

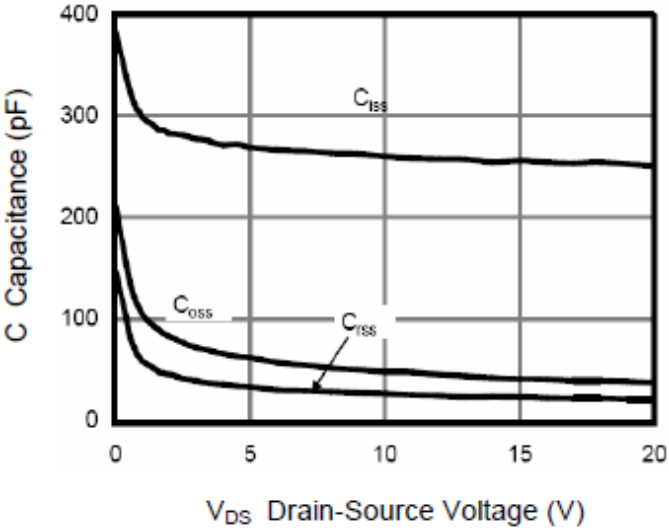


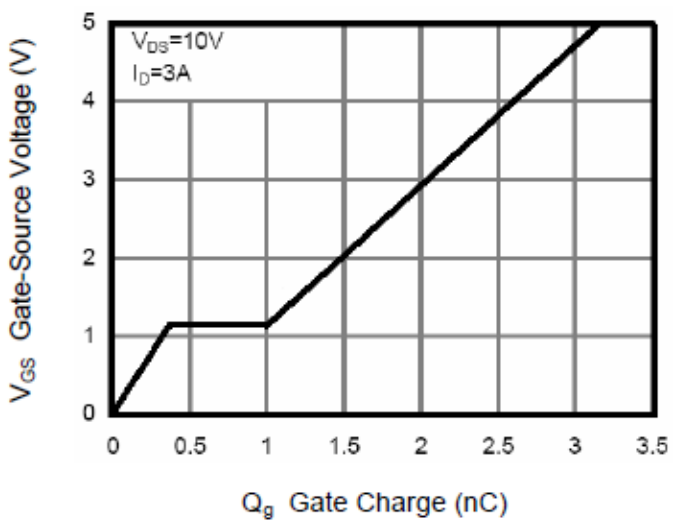


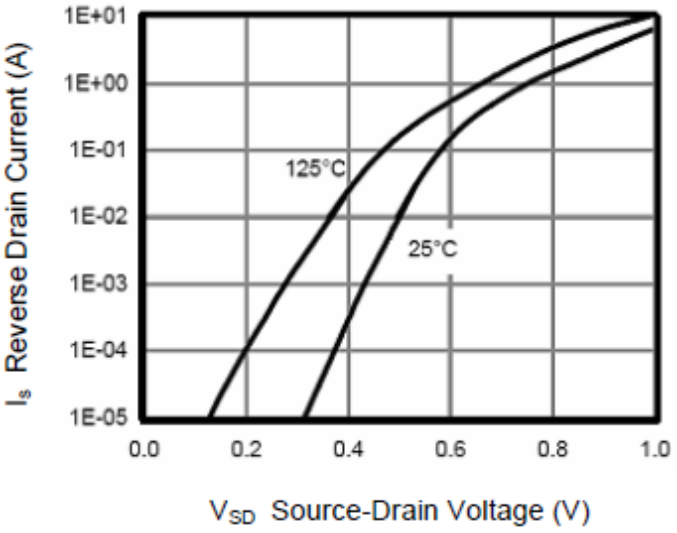




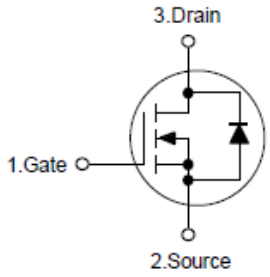




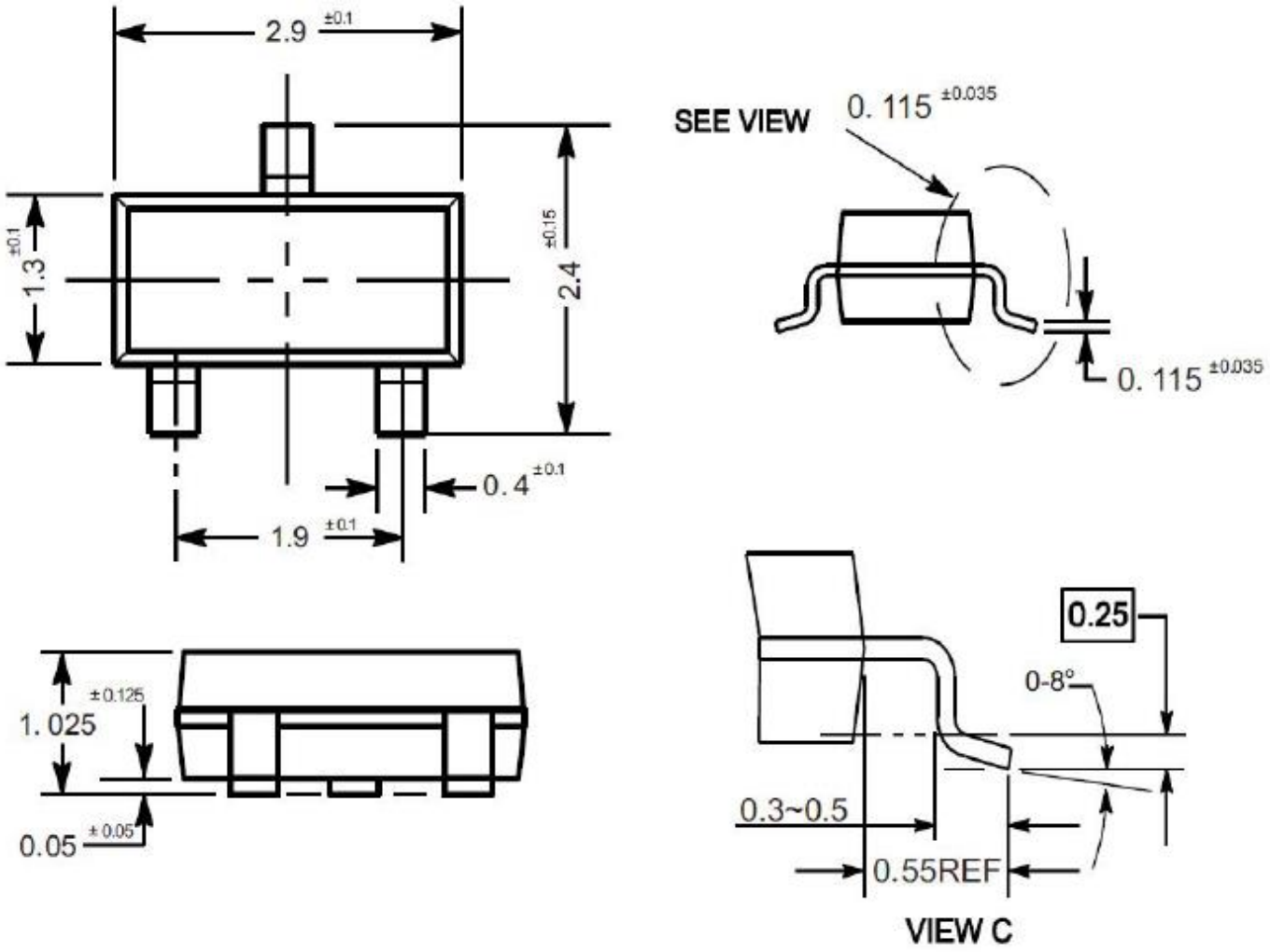




·Circuit diagram



·Package outlines : Dimensions in (mm)



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