60V N-Channel Power MOSFET

DESCRIPTION：

·Epoxy meets UL 94 V-0 flammability rating

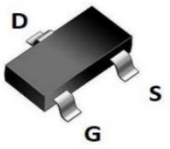
·High density cell design for low Ros(oN)

·Voltage controlled small signal switch

·Rugged and reliable

·ESD Protected

V_{DS}	60V
I_D	340mA
$R_{DS(ON)_MAX}$ @V_{GS}=10V	3 Ω



SOT-23

TYPICAL APPLICATIONS：

·Load Switch

·PWM Application

·Power management

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

Characteristic	Condition	Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current	T_A=25℃	I_D	340	mA
Power dissipation	T_A=25℃	P_D	300	mW
Junction & Storage temperature Range		T_J, T_{STG}	-55~+150	℃

THERMAL CHARACTERISTICS

Characteristic	Condition	Symbol	Value	Unit
Thermal resistance,	Junction to Ambient	$R_{\theta JA}$	357	℃/W

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

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage VGS = 0V, ID = 10uA	$V_{(BR)DSS}$	60			V
Gate-Source threshold voltage VDS = VGS, ID = 1mA	$V_{GS(th)}$	1.0		2.5	V
Gate-Source Leakage Current VGS = ±10V, VDS = 0V VGS = ±5V, VDS = 0V VGS = ±20V, VDS = 0V	I_{GSS}			±200 ±100 10	nA nA uA
Zero Gate Voltage Drain Current VDS = 48 V, VGS = 0 V	I_{DSS}			1.0	uA
Drain-Source On-State Resistance VGS = 4.5V, ID = 200mA VGS = 10V, ID = 500mA	$R_{DS(on)}$			4 3	Ω
Input capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{iss}			40	pF
Output capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{oss}			30	pF
Reverse transfer capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{rss}			10	pF
Turn-on delay time VDD=50 V, VGS= 10V, R_L=250Ω, R_G=50Ω, R_{GS}=50Ω	$td_{(ON)}$			10	ns
Turn-off delay time VDD=50 V, VGS= 10V, R_L=250Ω, R_G=50Ω, R_{GS}=50Ω	$td_{(OFF)}$			15	ns
Reverse recovery time VGS =0V,Is =300mA VR =25V , d_{Is}/d_t =-100A/us	trr		30		ns
Diode Forward Voltage IS = 300mA, VGS = 0V	VSD			1.5	V
Recovered charge V_{GS} =0V,Is=300mA,V_R =25V dIs/dt= 100A/us	Qr		30		nC

Typical Performance Characteristics

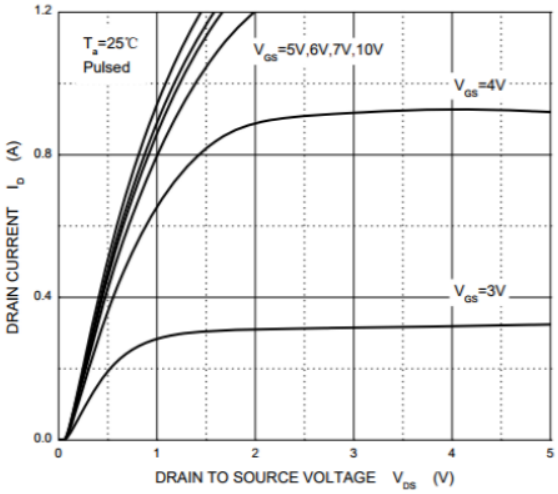


Figure 1. Output Characteristics

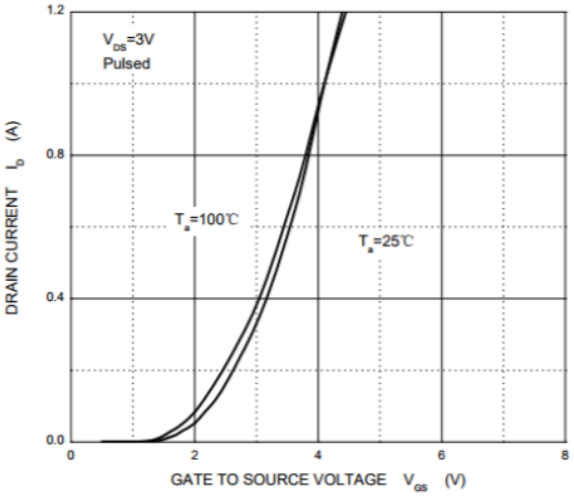


Figure 2. Transfer Characteristics

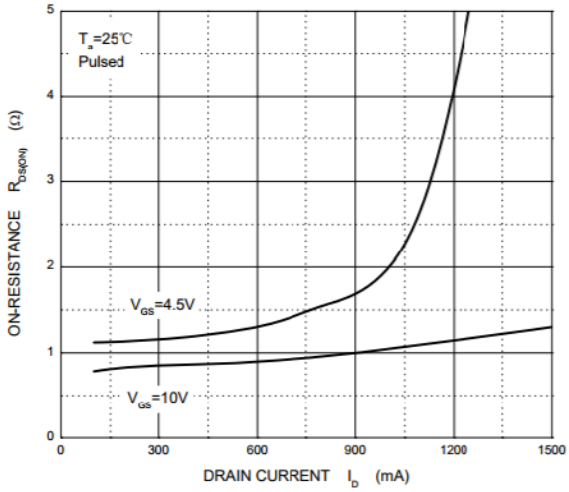


Figure 3. $R_{DS(ON)}$ vs. I_D

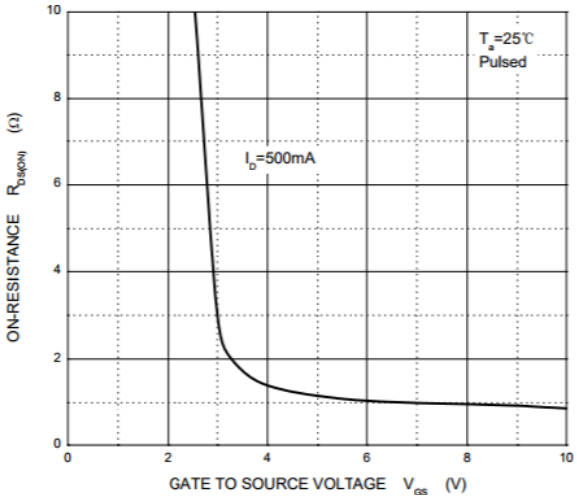


Figure 4: $R_{DS(ON)}$ vs. V_{GS}

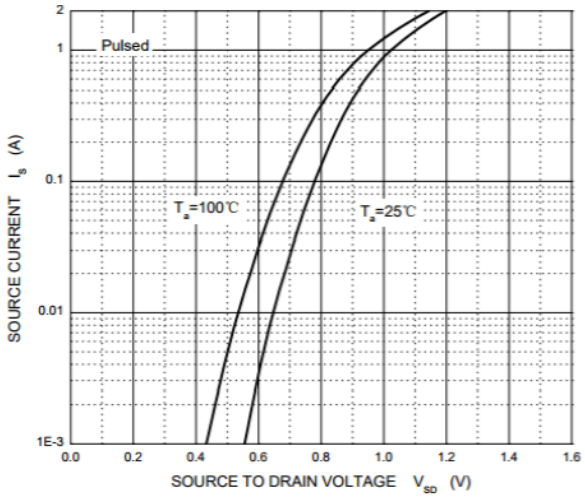


Figure 5: I_S vs. V_{SD}

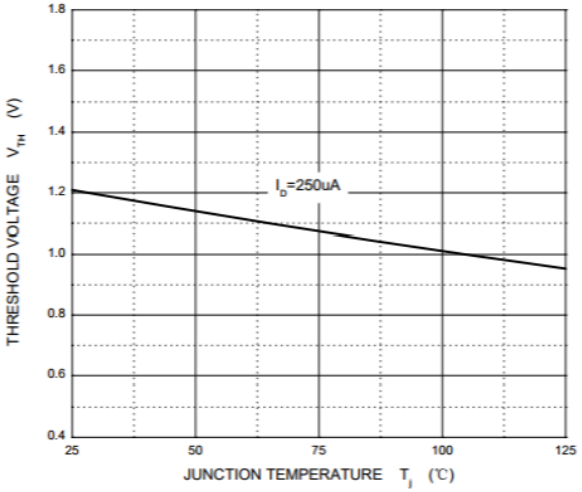
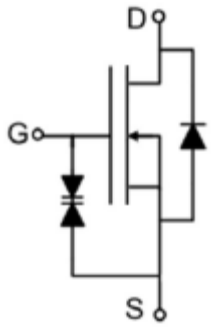
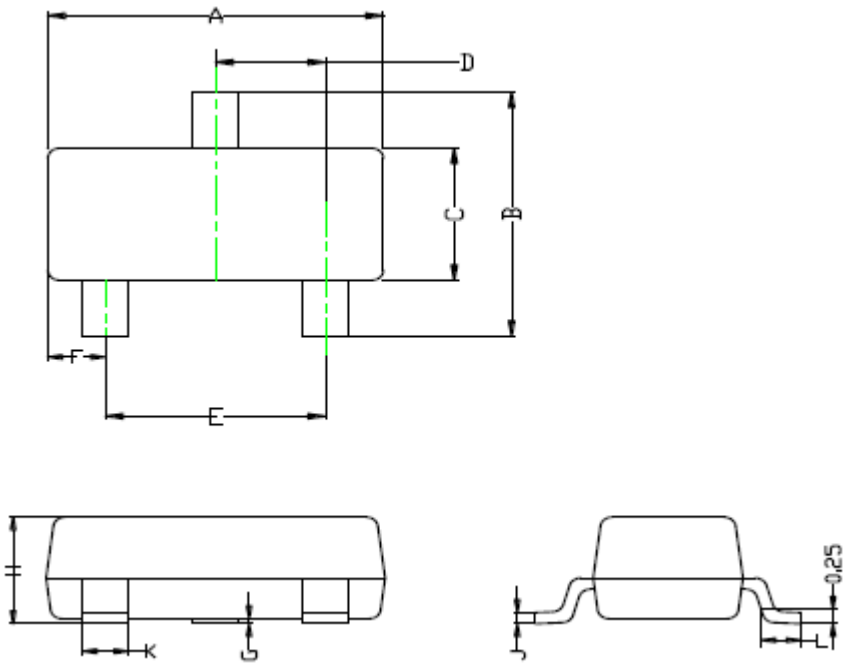


Figure 6: Threshold Voltage

·Circuit diagram



·Package outlines :



Symbol	Dimensions in mm	
	Min.	Max.
A	2.800	3.040
B	2.100	2.640
C	1.200	1.400
D	0.890	1.030
E	1.780	2.050
F	0.450	0.600
G	0.013	0.100
H	0.900	1.110
J	0.085	0.180
K	0.370	0.510
L	0.300	0.500

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