TO-92 Plastic-Encapsulate MOSFETS

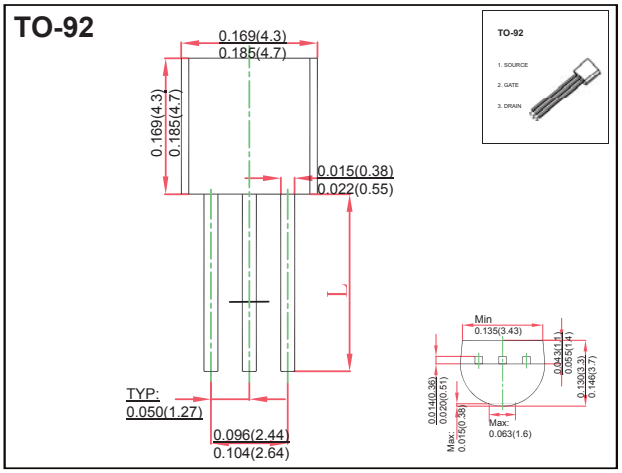
FEATURES

- N-Channel Power MOSFET
- Robust High Voltage Termination
- Avalanche Energy Specified
- Source-to-Drain Diode Recovery Time Comparable to a Discrete
- Fast Recovery Diode Diode is Characterized for Use in Bridge Circuits
- I_{DSS} and V_{DS}(on) Specified at Elevated Temperature

MECHANICAL DATA

- Case style:TO-92 molded plastic
- Mounting position:any

TO-92



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±30	
Continuous Drain Current	I_D	1	A
Pulsed Drain Current	I_{DM}	9	
Power Dissipation	P_D	0.625	W
Single Pulsed Avalanche Energy*	E_{AS}	20	mJ
Thermal Resistance from Junction to Ambient	R_{thJA}	200	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-50 ~+150	

*E_{AS} condition: T_j=25℃,V_{DD}=100V,V_{GS}=10V,L=10mH,I_{AS}=2A,R_G=25Ω

MOSFET ELECTRICAL CHARACTERISTICS T_A=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V(BR) DSS	VGS = 0V, ID =250μA	600			V
Gate-Threshold Voltage (note1)	VGS(th)	VDS = VGS, ID =250μA	2.0		4.0	
Gate-Body Leakage Current (note1)	IGSS	VDS =0V, VGS =±20V			±100	nA
Zero Gate Voltage Drain Current	IDSS	VDS =600V, VGS =0V			0.10	μA
Drain-Source On-State Resistance (note1)	RDS(on)	VGS =10V, ID =0.6A			10	Ω
Forward Transconductance (note1)	gFS	VDS =50V, ID =0.5A	0.5			S
Input Capacitance	Ciss	VDS =25V,VGS =0V, f =1MHz		210		pF
Output Capacitance	Coss			28		
Reverse Transfer Capacitance	Crss			4.2		
Turn-On Delay Time	td(on)	VDD=300V,ID=1A, VGS=10V,RG=18Ω		8		nS
Rise Time	tr			21		
Turn-Off Delay Time	td(off)			18		
Fall Time	tf			24		
Forward on Voltage(note1)	VSD	VGS =0V, IS=1A			1.5	V

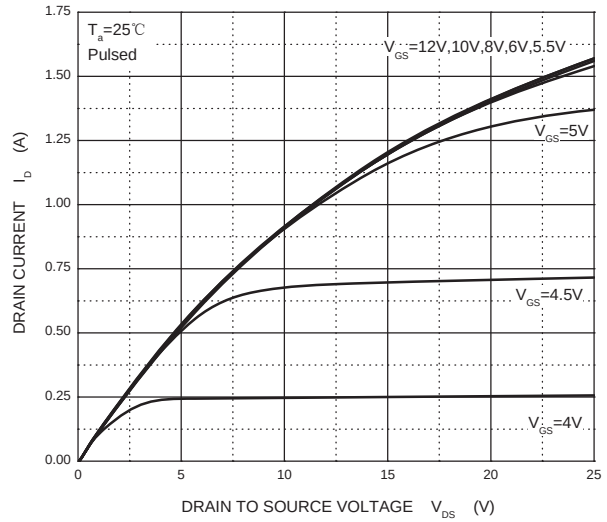
Notes:

1. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

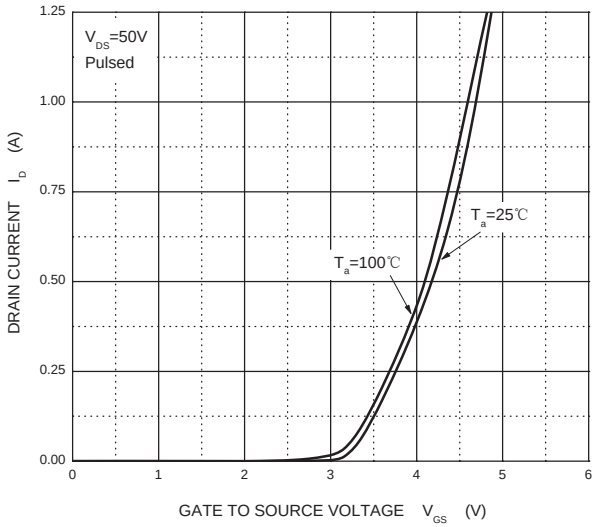
RATINGS AND CHARACTERISTIC CURVES

■ Typical Characterisitics

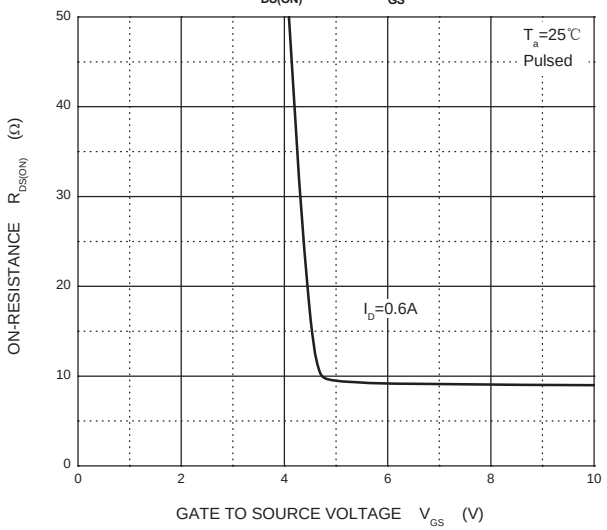
Output Characteristics



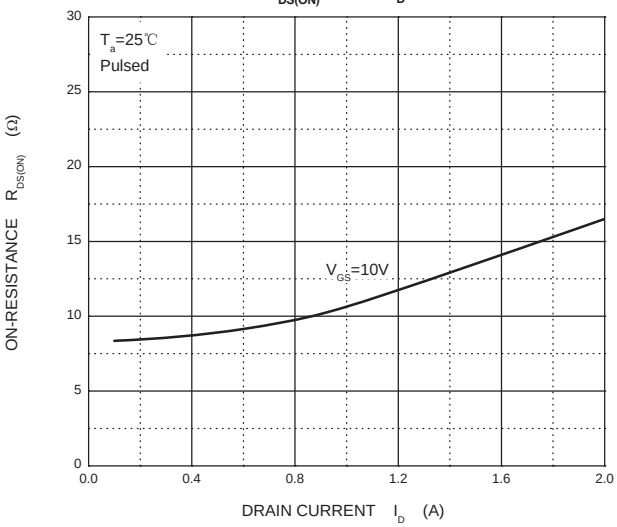
Transfer Characteristics



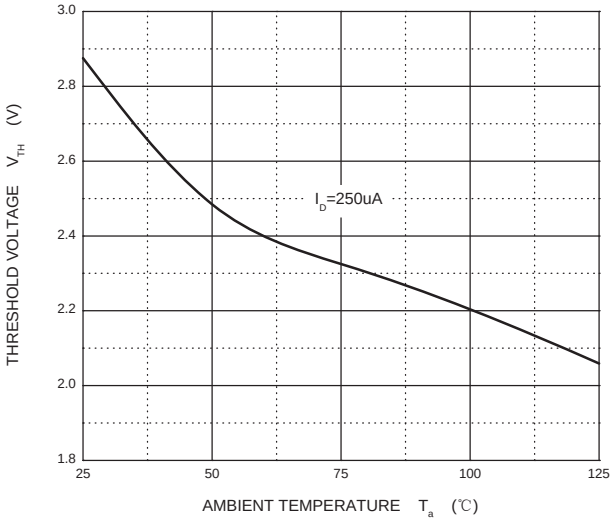
$R_{DS(ON)}$ — V_{GS}



$R_{DS(ON)}$ — I_D



Threshold Voltage



I_S — V_{SD}