N-Channel Power MOSFET (55V/120A)

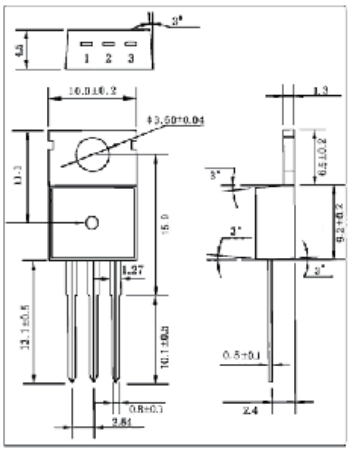
Purpose

Suited for low voltage applications such as automotive,
DC/DC Converters, and high efficiency switching
for power management in portable and battery operated products

Feature

Low $R_{DS(on)}$, low gate charge, low C_{rss}, fast switching.

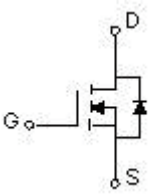
TO-220



1. Gate 2. Drain 3. Source

Absolute maximum ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	55	V
Drain Current	I_D(Tc=25℃)	110	A
Drain Current	I_D(Tc=100℃)	80	A
Pulsed Drain Current	I_{DM}	390	A
Gate-Source Voltage	V_{GSS}	±20	V
Avalanche Current	I_{AR}	62	A
Single Pulsed Avalanche Energy	E_{AS}	1050	mJ
Repetitive Avalanche Energy	E_{AR}	20	mJ
Total Power Dissipation	P_D(Tc=25℃)	200	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 150	℃

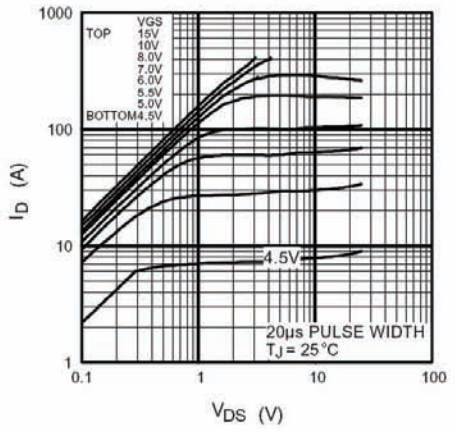


Electrical Characteristics(Ta=25℃)

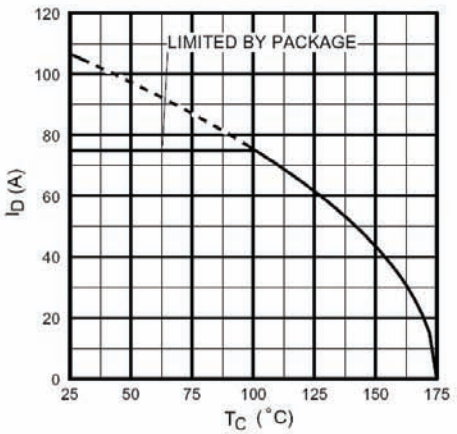
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	BV_{DSS}	V_{GS}=0V	I_D=250μA	55			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=55V	V_{GS}=0V			25	μA
		V_{DS}=44V T_C=150℃	V_{GS}=0V			250	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V	V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	2		4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=62A			8	mΩ
Forward Transconductance	g_{FS}	V_{DS}=25V	I_D=62A	44			S
Forward On Voltage	V_{SD}	V_{GS}=0V	I_S=62A			1.3	V
Input Capacitance	C_{iss}	V_{DS}=25V f=1MHz	V_{GS}=0V		3247		pF
Output Capacitance	C_{oss}				781		
Reverse Transfer Capacitance	C_{rss}				211		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=28V R_G=4.5Ω	I_D=62A		14		ns
Turn-On Rise Time	t_r				101		
Turn-Off Delay Time	$t_{d(off)}$				50		
Turn-Off Fall Time	t_f				65		

Typical Electrical and Thermal Characteristics (Curves)

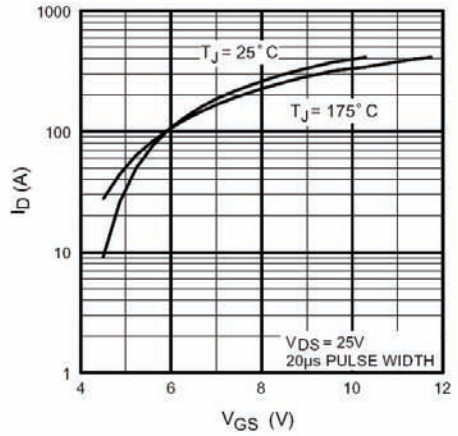
I_D — V_{DS}



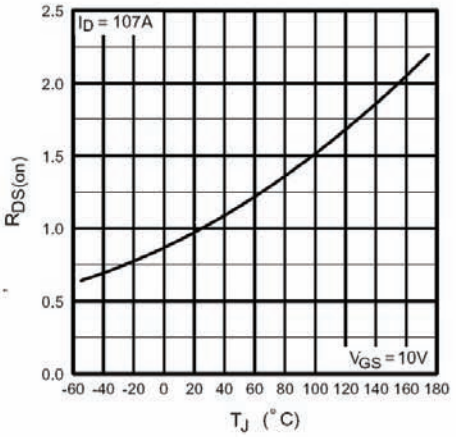
I_D — T_C



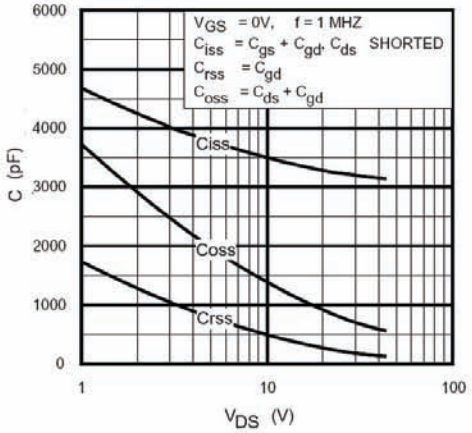
I_D — V_{GS}



$R_{DS(on)}$ — T_J



C — V_{DS}



V_{GS} — Q_G