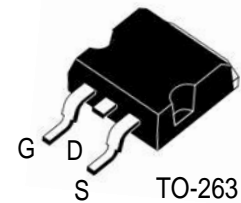
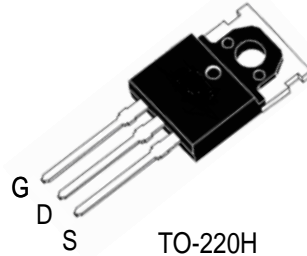


POWER MOSFET

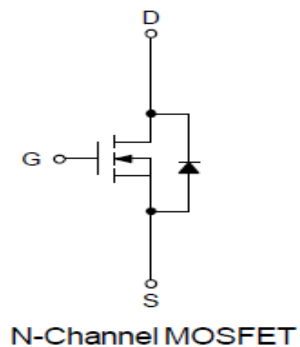
Features

- 68V,80A N-Channel MOSFET
- $R_{DS(on)(typ.)}=6.5m\Omega @V_{GS}=10V$
- High ruggedness
- Fast switching
- 100% avalanche tested
- Exceptional dv/dt capability



Applications

- Switching application



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source Voltage	68	V
V_{GS}	Gate-Source Voltage	+25	V
I_D	Continuous Drain Current($T_C=25^\circ C$)	70	A
I_{DM}	Pulsed Drain Current(Note 1)	240	A
EAS	Single Pulsed Avalanche Energy(Note 2)	256	mJ
P_D	Maximum Power Dissipation ($T_C=25^\circ C$)	65	W
	Maximum Power Dissipation ($T_C=100^\circ C$)	32	W
T_J	Operating Junction Temperature Range	-55 to +175	$^\circ C$
T_{STG}	Storage Temperature Range	-55 to +175	$^\circ C$

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. Starting $T_J=25^\circ C, L=1.0mH, R_G=50\Omega, I_D=37A, V_{GS}=10V$



Thermal data

Symbol	Parameter	Max.	Units
R_{thJ-C}	Thermal Resistance, Junction to case	2.2	$^{\circ}C/W$

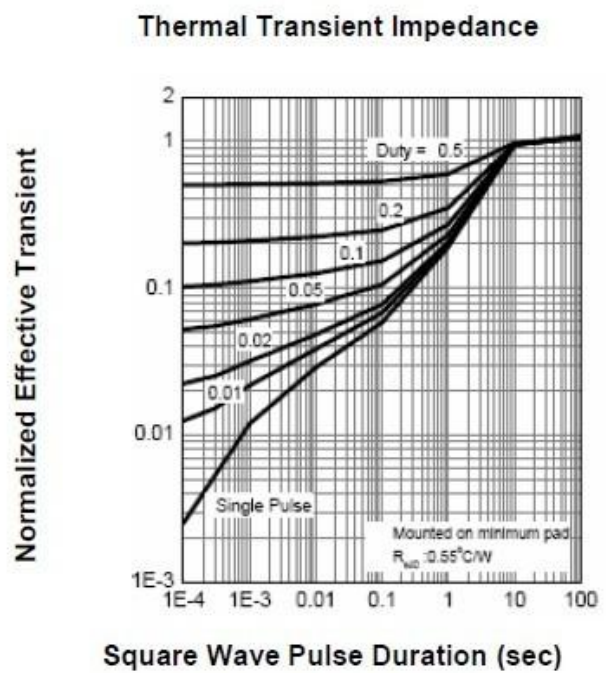
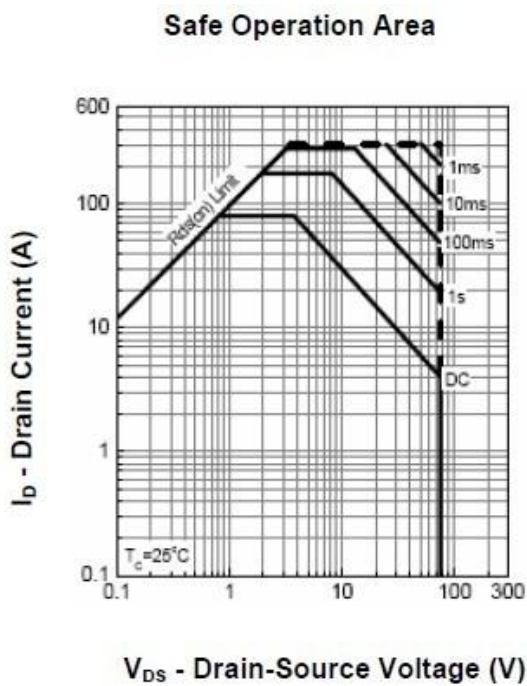
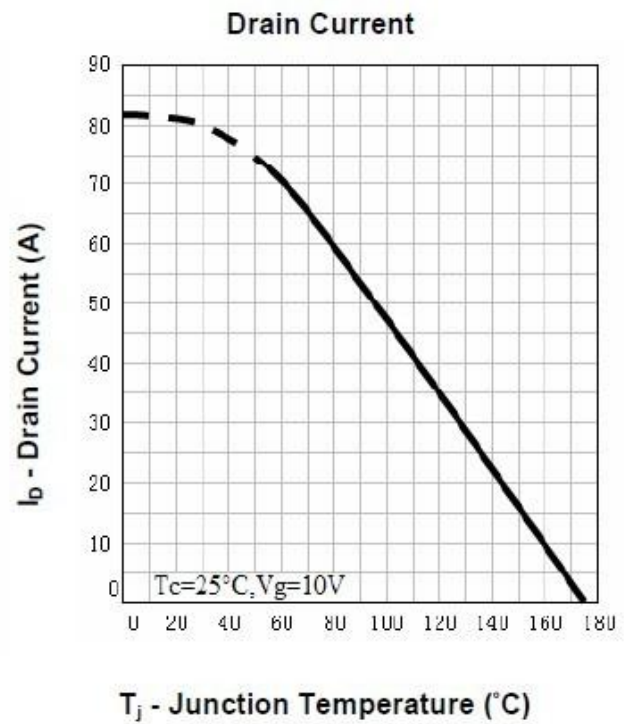
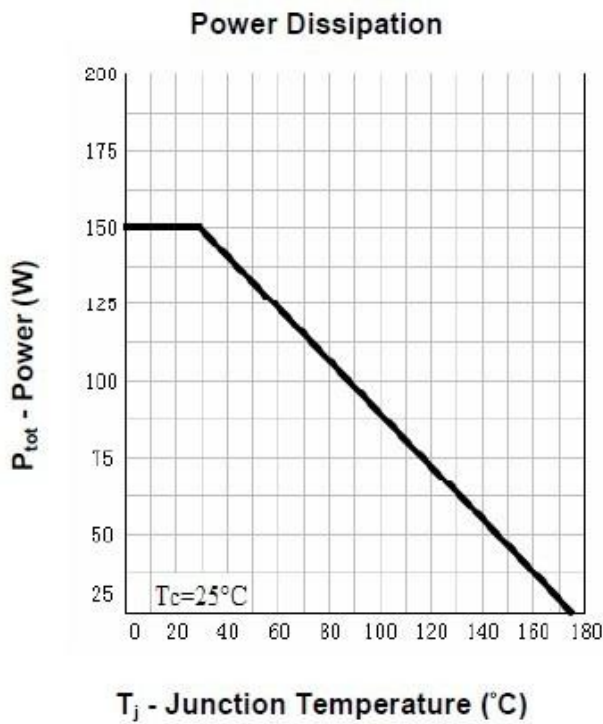
Electrical Characteristics ($T_C=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	68			V
I_{DSSS}	Drain-Source Leakage Current	$V_{DS}=68V, V_{GS}=0V$			1	μA
I_{GSS}	Gate Leakage Current, Forward	$V_{GS}=25V, V_{DS}=0V$			100	nA
	Gate Leakage Current, Reverse	$V_{GS}=-25V, V_{DS}=0V$			-100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	2	3	4	V
$R_{DS(on)}$	Collector-Emitter Saturation Voltage	$V_{GS}=10V, I_D=40A$		6.5	8	m Ω
gfs	Forward Transconductance	$V_{DS}=15V, I_D=30A$		28		S
Q_g	Total Gate Charge	$V_{DD}=68V$ $V_{GS}=10V$ $I_D=40A$		76		nC
Q_{gs}	Gate-Source Charge			17		nC
Q_{gd}	Gate-Drain Charge			24		nC
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=35V$ $V_{GS}=10V$ $I_D=25A$ $R_G=3.5\Omega$	-	37	-	ns
t_r	Turn-on Rise Time		-	35	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	110	-	ns
t_f	Turn-off Fall Time		-	77	-	ns
C_{iss}	Input Capacitance	$V_{DS}=30V$ $V_{GS}=0V$ $f = 1MHz$	-	3250	-	pF
C_{oss}	Output Capacitance		-	580	-	pF
C_{rss}	Reverse Transfer Capacitance		-	165	-	pF
R_{Gint}	Integrated gate resistor			1.5		Ω

Source-Drain Ratings and Characteristics ($T_C=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage	$V_{GS}=0V, I_S=20A$	-		1.2	V
I_S	Continuous Diode Forward Current				85	A
t_{rr}	Reverse Recovery Time	$V_{DD}=25V, I_S=40A$ $dI_F/dt=100A/\mu s$	-	42		ns
Q_{rr}	Reverse Recovery Charge		-	70		nC

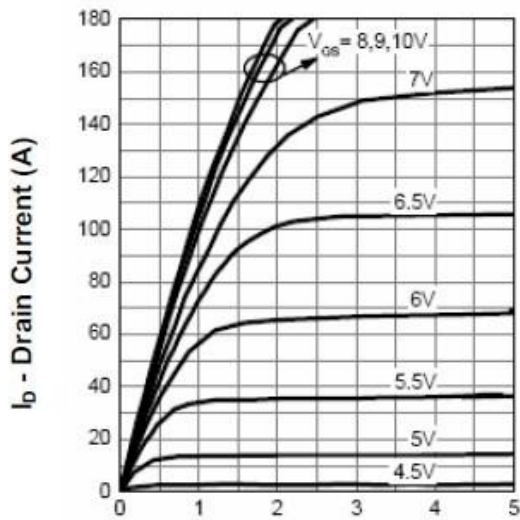
Typical Characteristics





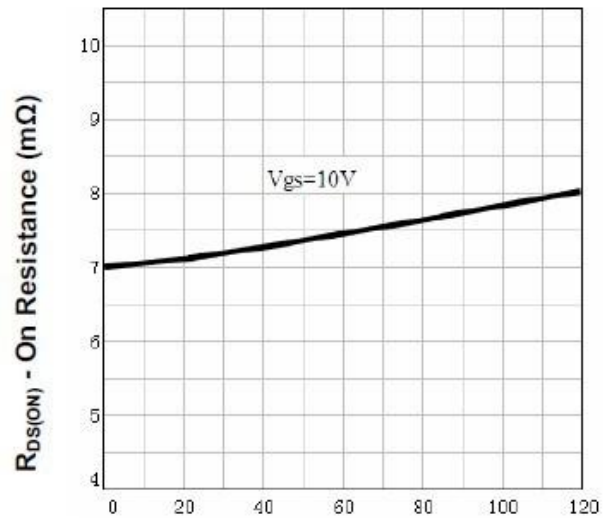
Typical Characteristics

Output Characteristics



V_{DS} - Drain-Source Voltage (V)

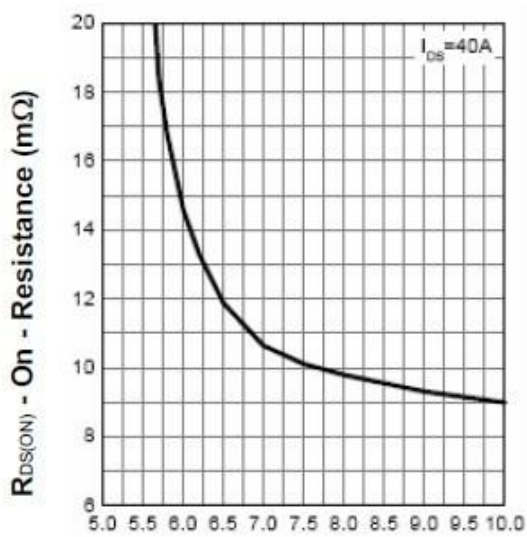
Drain-Source On Resistance



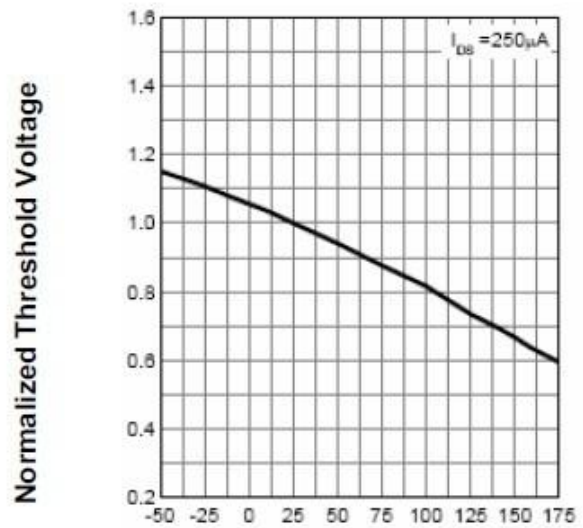
I_D - Drain Current (A)

Drain-Source On Resistance

Gate Threshold Voltage



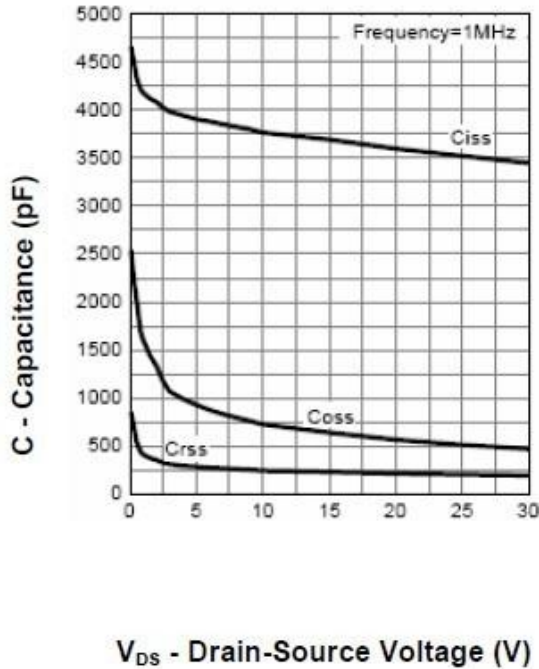
V_{GS} - Gate-Source Voltage (V)



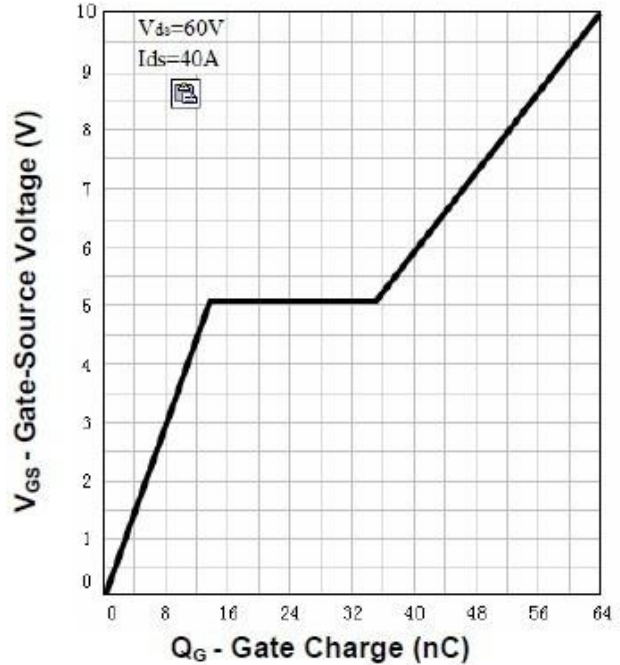
T_j - Junction Temperature ($^{\circ}C$)



Capacitance

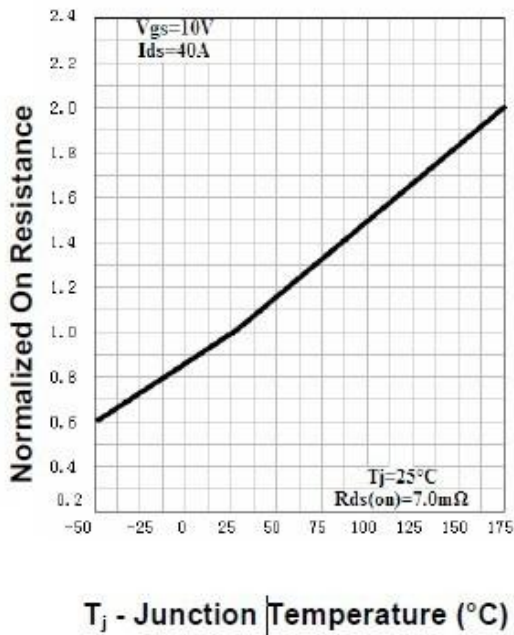


Gate Charge

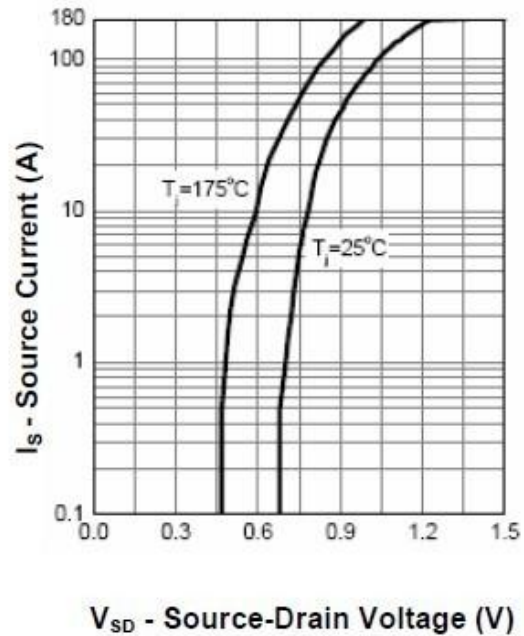


Typical Characteristics

Drain-Source On Resistance

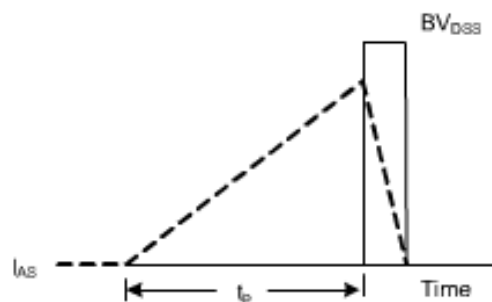
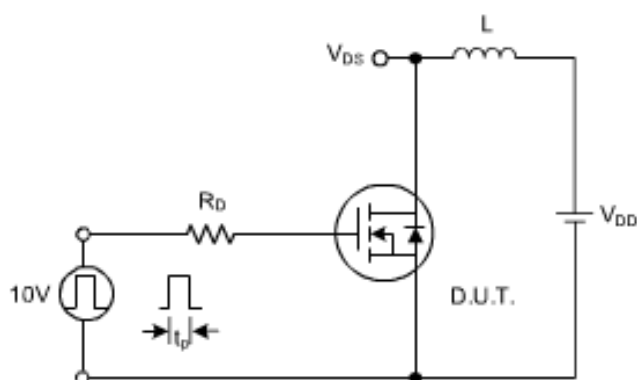


Source-Drain Diode Forward

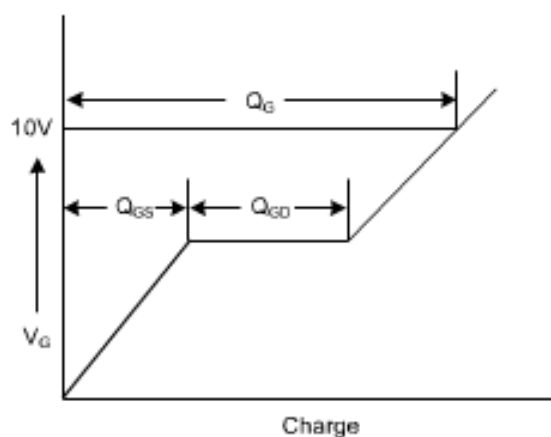
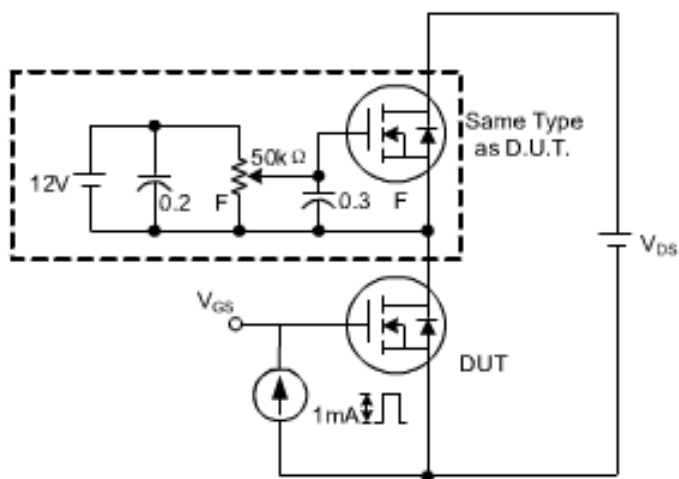


Test Circuits

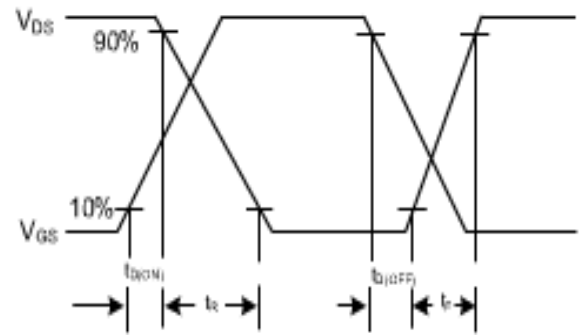
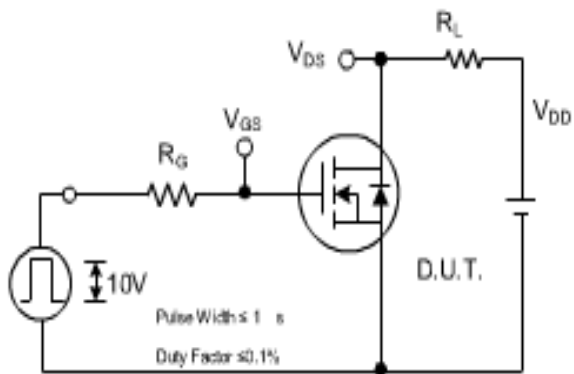
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Gate charge test circuits and waveforms



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