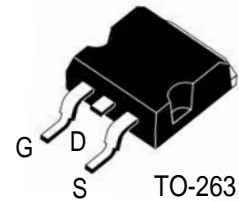
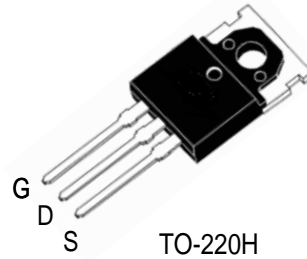


## POWER MOSFET

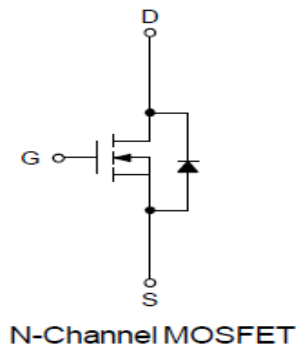
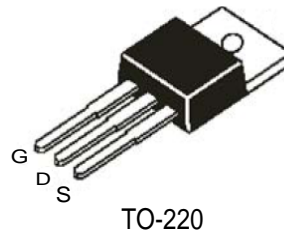
### Features

- 68V,75A 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	$\pm 25$	V
$I_D$	Continuous Drain Current( $T_C=25^\circ C$ )	75	A
	Continuous Drain Current( $T_C=100^\circ C$ )	50	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	$^{\circ}C/W$

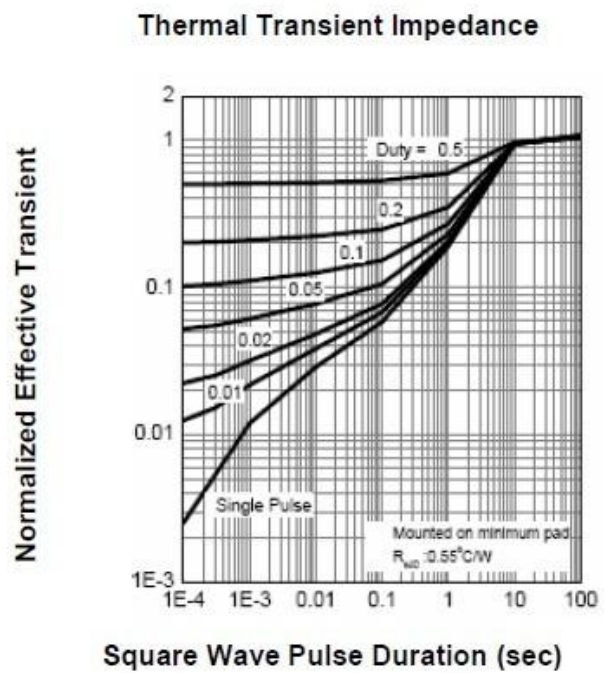
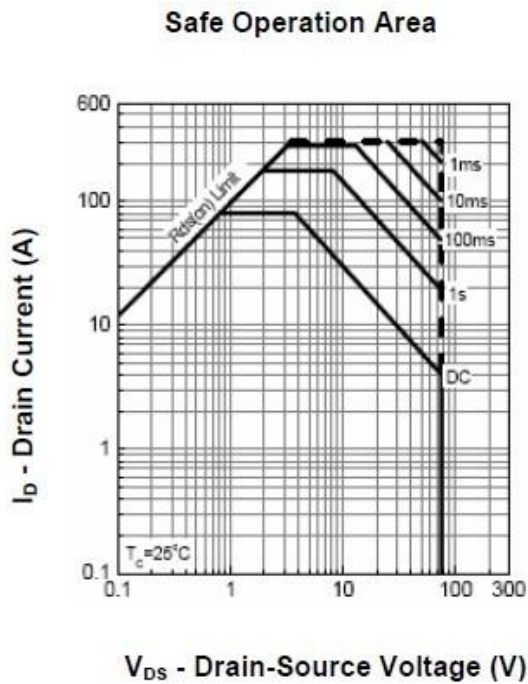
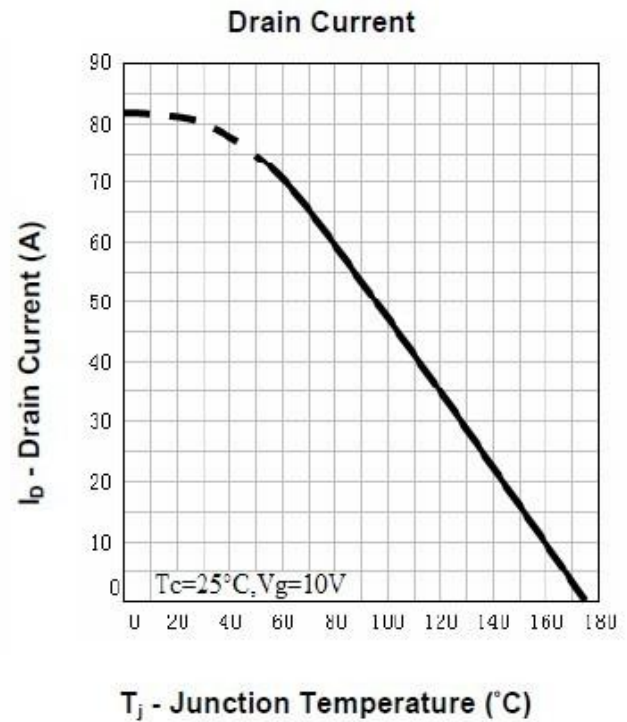
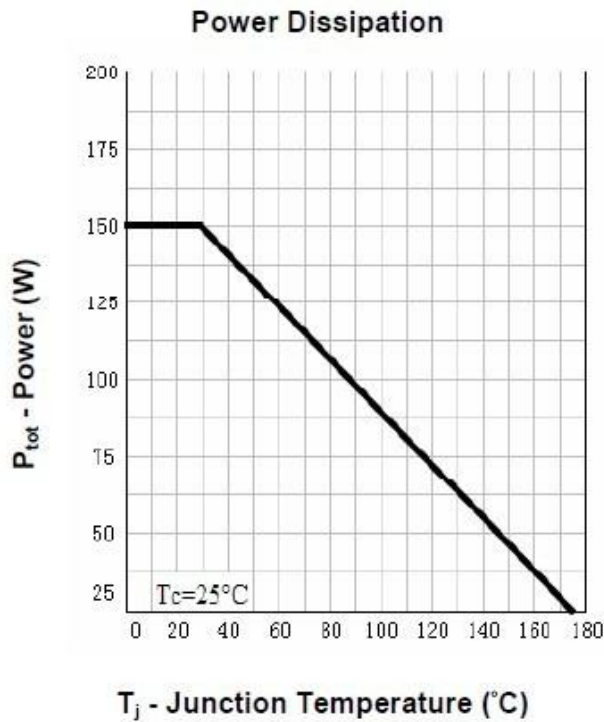
**Electrical Characteristics** ( $T_C=25^{\circ}C$  unless otherwise noted)

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	$\mu A$
$I_{GSS}$	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 $\Omega$
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		$\Omega$

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

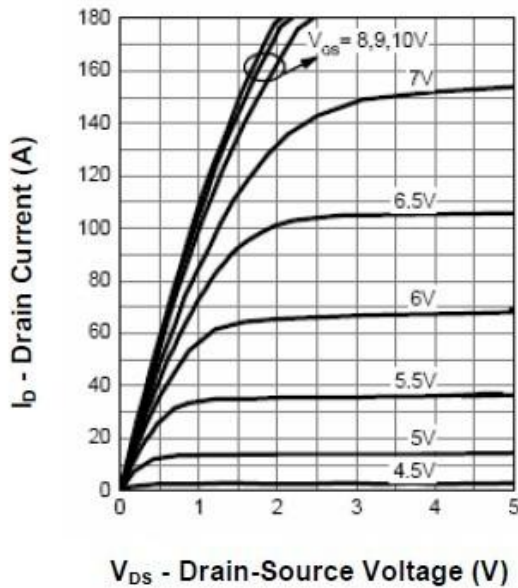
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{SD}$	Forward On Voltage	$V_{GS}=0V, I_S=20A$	-		1.2	V
$I_S$	Continuous Diode Forward Current				85	A
$t_{rr}$	Reverse Recovery Time	$V_{DD}=25V, I_S=40A$ $di_F/dt=100A/\mu s$	-	42		ns
$Q_{rr}$	Reverse Recovery Charge		-	70		nC

## Typical Characteristics

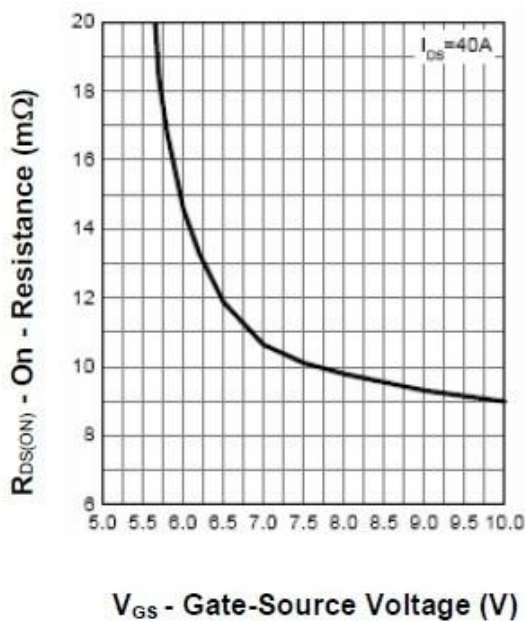


## Typical Characteristics

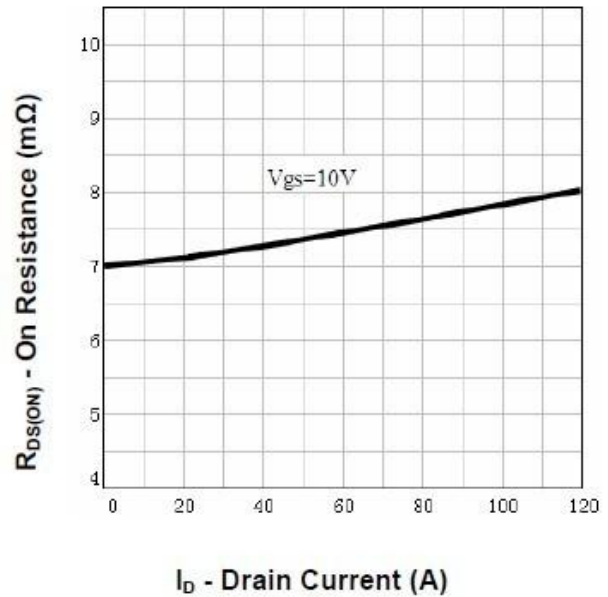
Output Characteristics



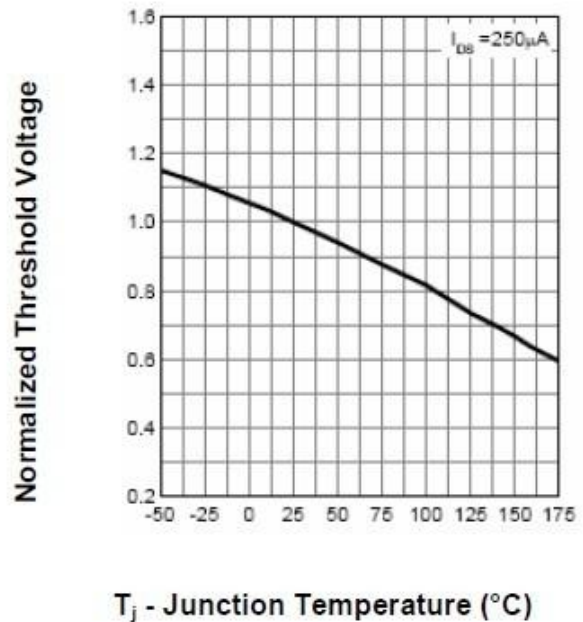
Drain-Source On Resistance



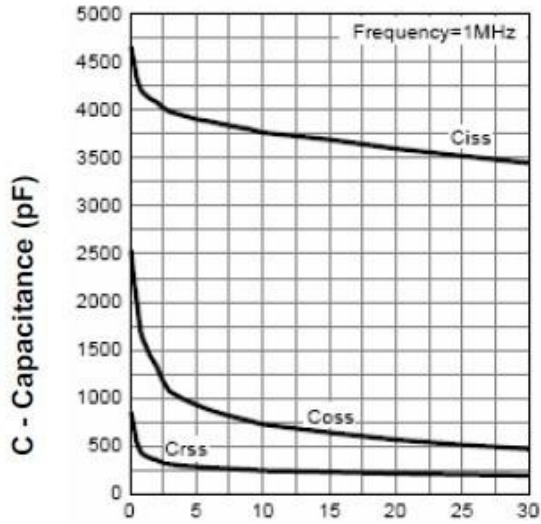
Drain-Source On Resistance



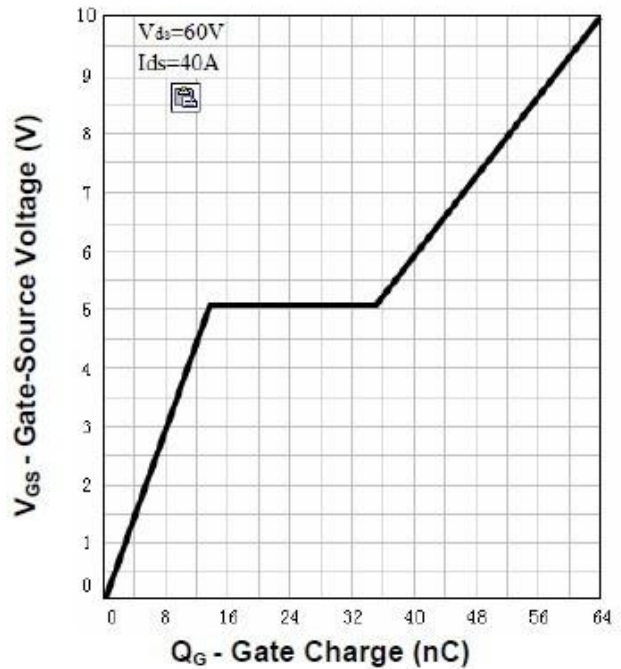
Gate Threshold Voltage



Capacitance

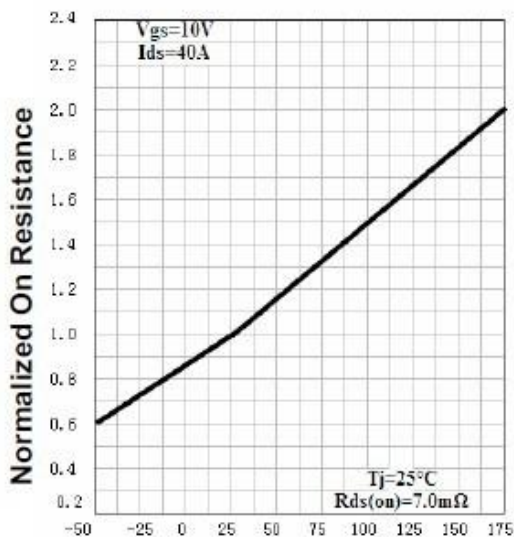


Gate Charge

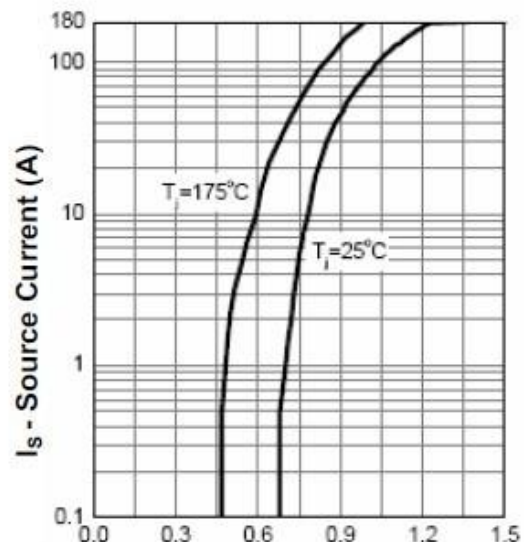


Typical Characteristics

Drain-Source On Resistance



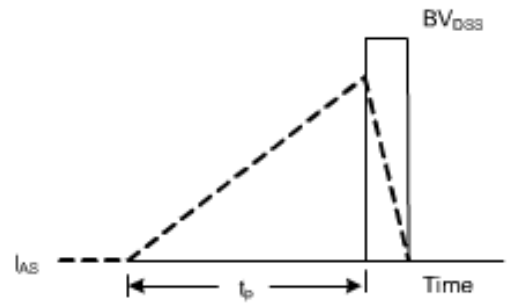
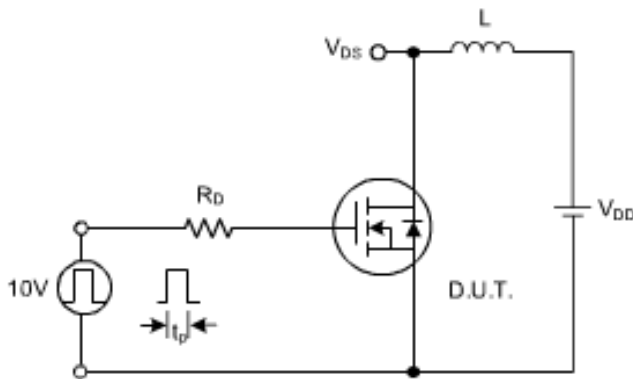
Source-Drain Diode Forward



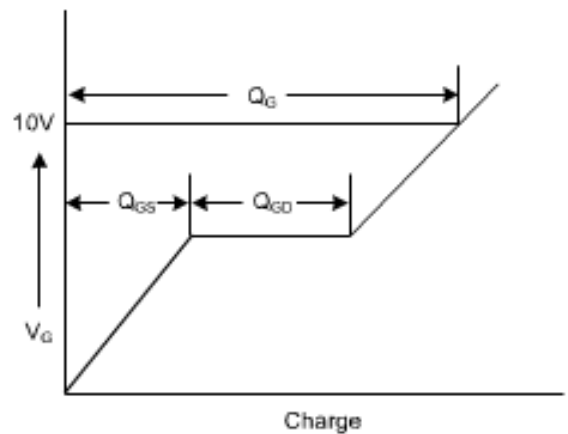
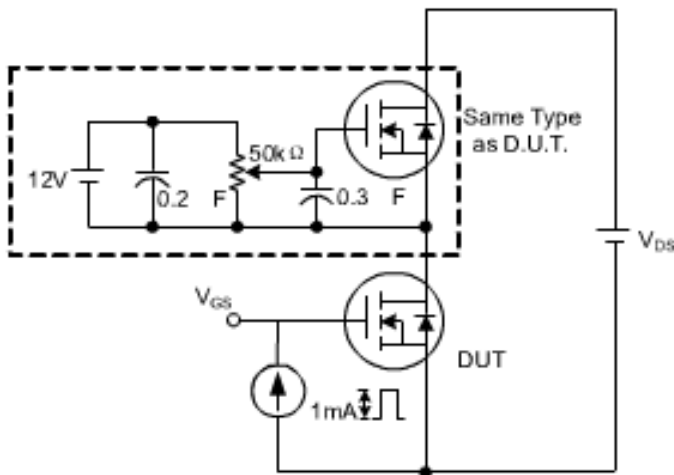


## Test Circuits

### Avalanche test circuits and waveforms



### Gate charge test circuits and waveforms



## Switching time test circuits and waveforms

