

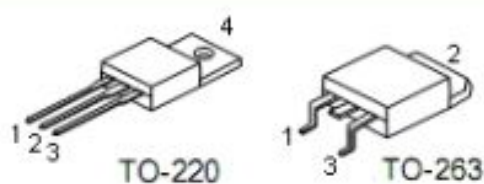
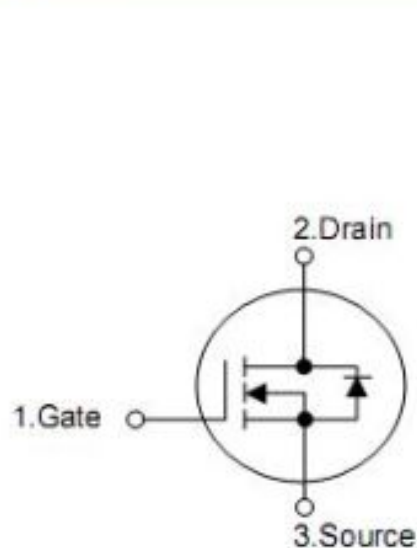
1. Features

- $R_{DS(on)}=9m\Omega$ (typ.) @ $V_{GS}=10V$
- 100% avalanche tested
- Reliable and rugged
- Lead free and green device available (RoHS Compliant)

2. Applications

- Switching application
- Power management for inverter systems

3. Symbol



Pin	Function
1	Gate
2	Drain
3	Source
4	Drain

4. Absolute maximum ratings

($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter		Symbol	Rating	Units
Drain-source voltage		V_{DS}	100	V
Gate-source voltage		V_{GS}	± 25	V
Maximum junction temperature		T_J	175	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-55 to 175	$^{\circ}\text{C}$
Continuous drain current	$T_C=25^{\circ}\text{C}$	I_D^3	75	A
	$T_C=100^{\circ}\text{C}$		51	A
Pulsed drain current	$T_C=25^{\circ}\text{C}$	I_{DP}^4	219	A
Avalanche current		I_{AS}^5	30	A
Avalanche energy		E_{AS}^5	225	mJ
Maximum power dissipation	$T_C=25^{\circ}\text{C}$	P_D	166	W
	$T_C=100^{\circ}\text{C}$		83	W

5. Thermal characteristics

Parameter	Symbol	Rating	Unit
Thermal resistance, Junction-ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$
Thermal resistance, Junction-case	$R_{\theta JC}$	0.9	$^{\circ}\text{C/W}$

6. Electrical characteristics

($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-source breakdown voltage	BV_{DSS}	$V_{GS}=0V, I_{DS}=250\text{Ma}$	100	-	-	V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=80V, V_{GS}=0V$	-	-	1	μA
		$T_J=125^{\circ}\text{C}$	-	-	20	
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	2.0	3.0	4.0	V
Gate leakage current	I_{GSS}	$V_{GS}=\pm 25V, V_{DS}=0V$	-	-	± 100	nA
Drain-source on-state resistance	$R_{DS(on)}^1$	$V_{GS}=10V, I_{DS}=50\text{A}$	-	9	11	$\text{m}\Omega$
Gate resistance	R_g	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	-	1.2	-	Ω
Diode forward voltage	V_{SD}^1	$I_{SD}=50\text{A}, V_{GS}=0V$	-	-	1.3	V
Reverse recovery time	t_{rr}	$I_{SD}=50\text{A},$ $dI_{SD}/dt=100\text{A}/\mu\text{s}$	-	46	-	nS
Reverse recovery charge	Q_{rr}		-	86	-	nC
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1\text{MHz}$	-	2946	-	pF
Output capacitance	C_{oss}		-	339	-	
Reverse transfer capacitance	C_{rss}		-	179	-	
Turn-on delay time	$t_{d(on)}$	$V_{DD}=50V, I_{DS}=30\text{A},$ $R_G=6.8\Omega, V_{GS}=10V$	-	15	-	ns
Rise time	t_r		-	108	-	
Turn-off delay time	$t_{d(off)}$		-	51	-	
Fall time	t_f		-	59	-	
Total gate charge	Q_g	$V_{DS}=50V, V_{GS}=10V$ $I_{DS}=30\text{A}$	-	60	-	nC
Gate-source charge	Q_{gs}		-	13.7	--	
Gate-drain charge	Q_{gd}		-	22.8	--	

Note : 1. Pulse test; pulse width<300us duty cycle<2%.

2. Guaranteed by design, not subject to production testing.

3. Package limitation current is 55A.

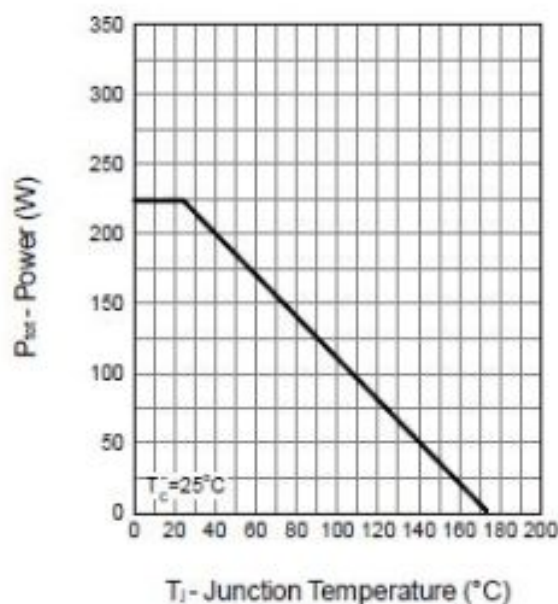
4. Repetitive rating, pulse width limited by max junction temperature.

5. Starting $T_J=25^{\circ}\text{C}$, $L=0.5\text{mH}$, $I_{AS}=30\text{A}$.

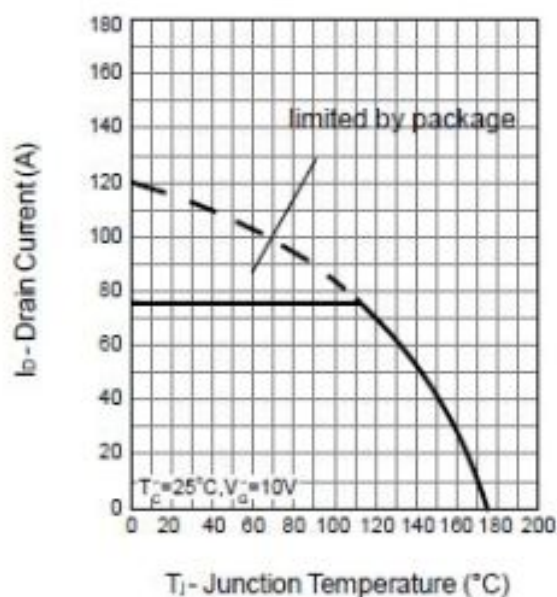
7. Test circuits and waveforms

Typical Operating Characteristics

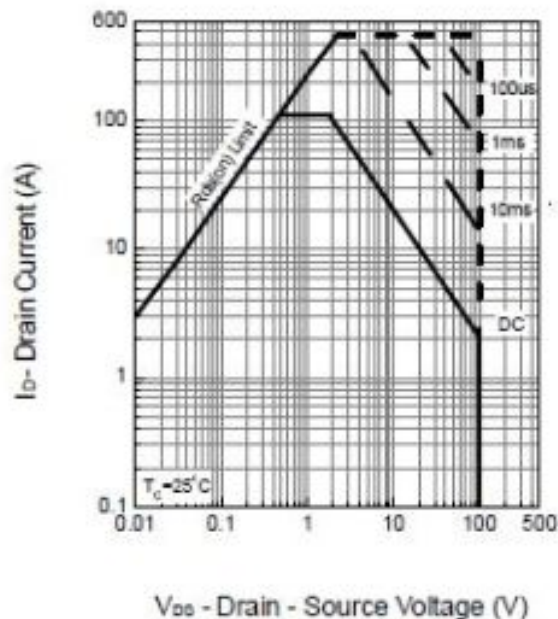
Power Dissipation



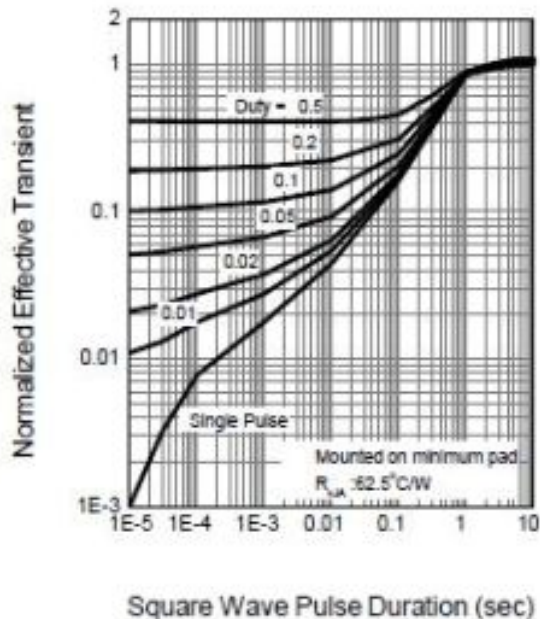
Drain Current



Safe Operation Area



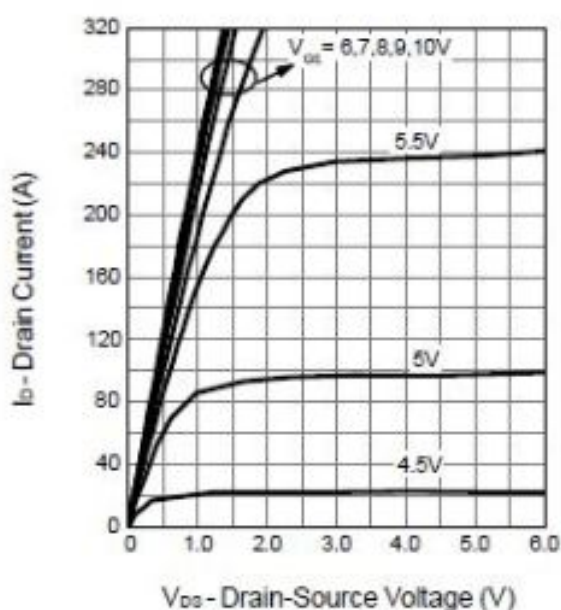
Thermal Transient Impedance



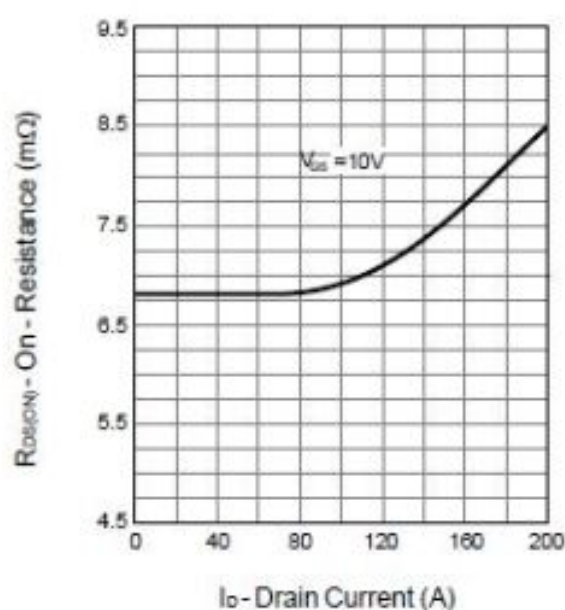
当是百度文库用户免费上传的可与其他用户
享的文档，具体共享方式由上传人自由设
要带有以下“共享文档”标识的文档便是该
[了解文档类型](#)

Characteristics (Cont.)

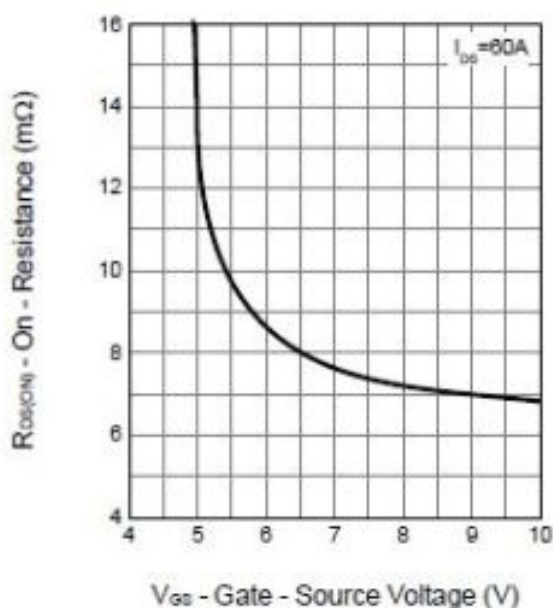
Output Characteristics



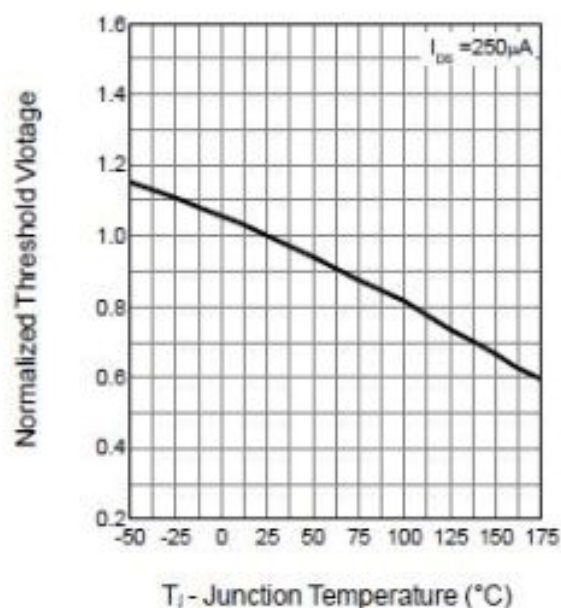
Drain-Source On Resistance



Drain-Source On Resistance

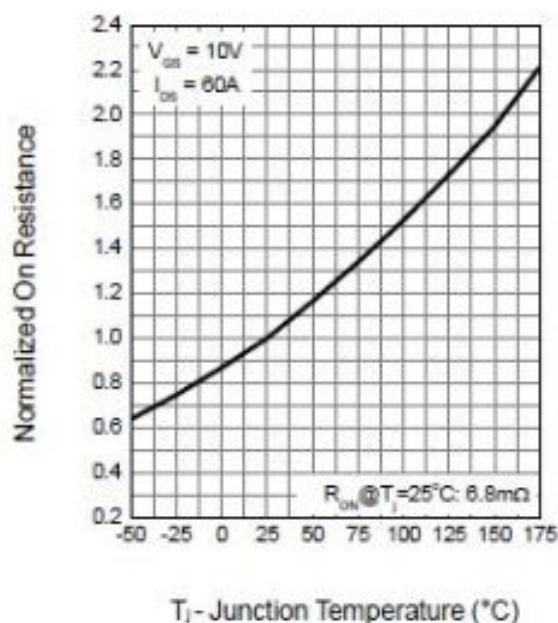


Gate Threshold Voltage

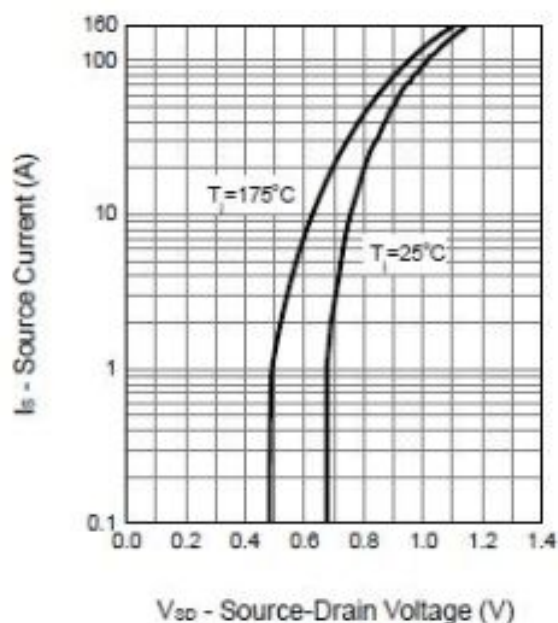


Typical Operating Characteristics (Cont.)

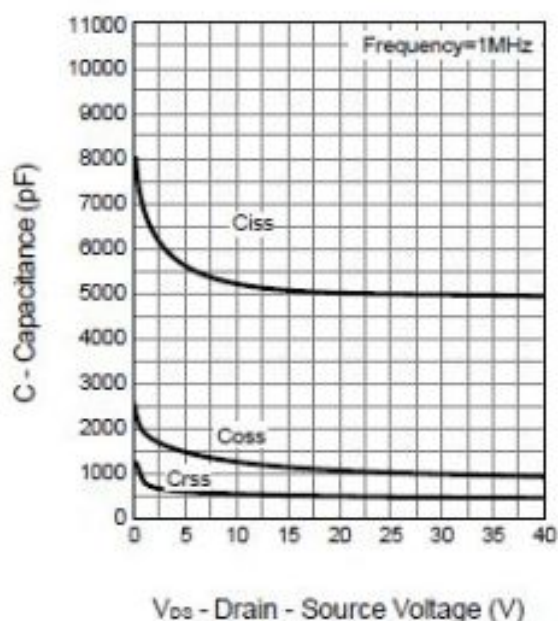
Drain-Source On Resistance



Source-Drain Diode Forward



Capacitance



Gate Charge

