

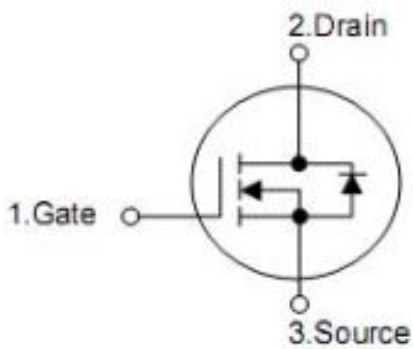
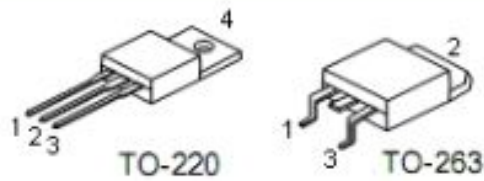
## 1. Features

- $R_{DS(on)}=9m\Omega$  (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	$V_{DSS}$	100	V
Gate-source voltage	$V_{GSS}$	$\pm 25$	V
Maximum junction temperature	$T_J$	175	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to 175	$^{\circ}\text{C}$
Continuous drain current	$I_D^3$	$T_C=25^{\circ}\text{C}$	A
		$T_C=100^{\circ}\text{C}$	A
Pulsed drain current	$I_{DP}^4$	219	A
Avalanche current	$I_{AS}^5$	30	A
Avalanche energy	$E_{AS}^5$	225	mJ
Maximum power dissipation	$P_D$	$T_C=25^{\circ}\text{C}$	W
		$T_C=100^{\circ}\text{C}$	W

#### 5. Thermal characteristics

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

**6. Electrical characteristics**

(T<sub>A</sub>=25°C, unless otherwise noted)

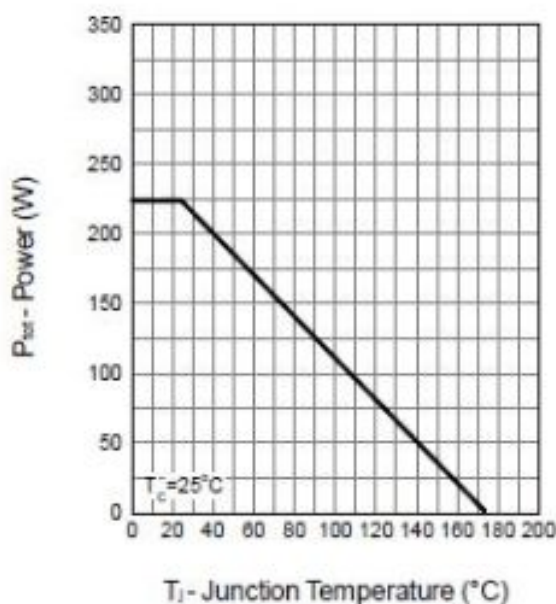
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-source breakdown voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>DS</sub> =250Ma	100	-	-	V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =80V, V <sub>GS</sub> =0V	-	-	1	μA
		T <sub>J</sub> =125°C	-	-	20	
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>b</sub> =250μA	2.0	3.0	4.0	V
Gate leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±25V, V <sub>DS</sub> =0V	-	-	±100	nA
Drain-source on-state resistance	R <sub>DS(on)</sub> <sup>1</sup>	V <sub>GS</sub> =10V, I <sub>DS</sub> =50A	-	9	11	mΩ
Gate resistance	R <sub>g</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =0V, f=1MHz	-	1.2	-	Ω
Diode forward voltage	V <sub>SD</sub> <sup>1</sup>	I <sub>SD</sub> =50A, V <sub>GS</sub> =0V	-	-	1.3	V
Reverse recovery time	t <sub>rr</sub>	I <sub>SD</sub> =50A , dI <sub>SD</sub> /dt=100A/μs	-	46	-	nS
Reverse recovery charge	Q <sub>rr</sub>		-	86	-	nC
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=1MHz	-	2946	-	pF
Output capacitance	C <sub>oss</sub>		-	339	-	
Reverse transfer capacitance	C <sub>rss</sub>		-	179	-	
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =50V, I <sub>DS</sub> =30A, R <sub>G</sub> =6.8Ω, V <sub>GS</sub> =10V	-	15	-	ns
Rise time	t <sub>r</sub>		-	108	-	
Turn-off delay time	t <sub>d(off)</sub>		-	51	-	
Fall time	t <sub>f</sub>		-	59	-	
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =10V I <sub>DS</sub> =30A	-	60	-	nC
Gate-source charge	Q <sub>gs</sub>		-	13.7	--	
Gate-drain charge	Q <sub>gd</sub>		-	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<sub>J</sub>=25°C, L=0.5mH, I<sub>S</sub>=30A.

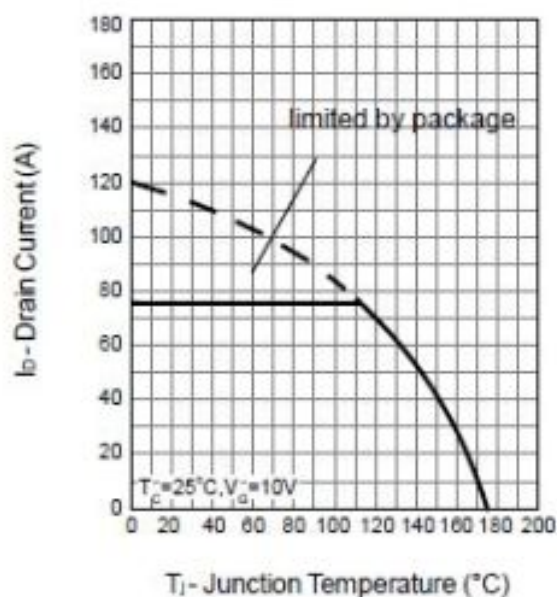
7. Test circuits and waveforms

Typical Operating Characteristics

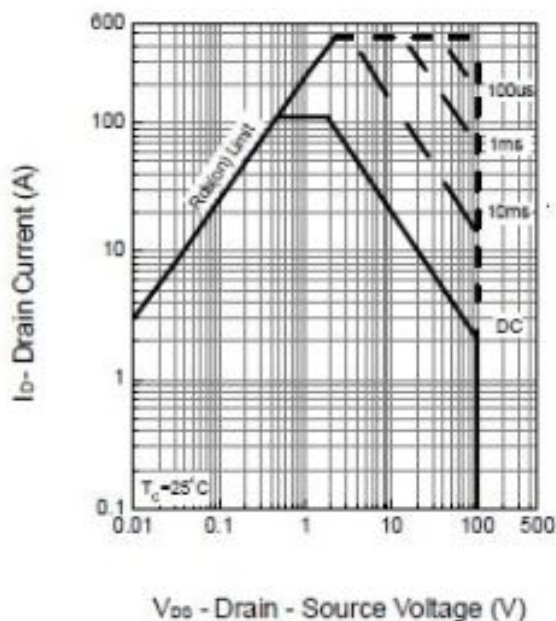
Power Dissipation



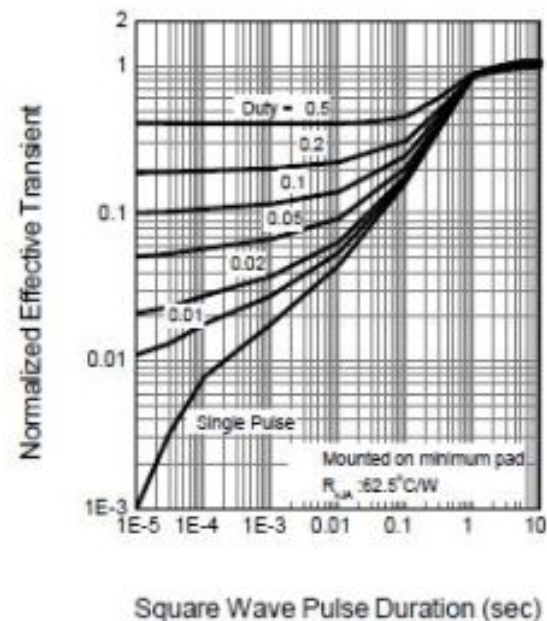
Drain Current



Safe Operation Area



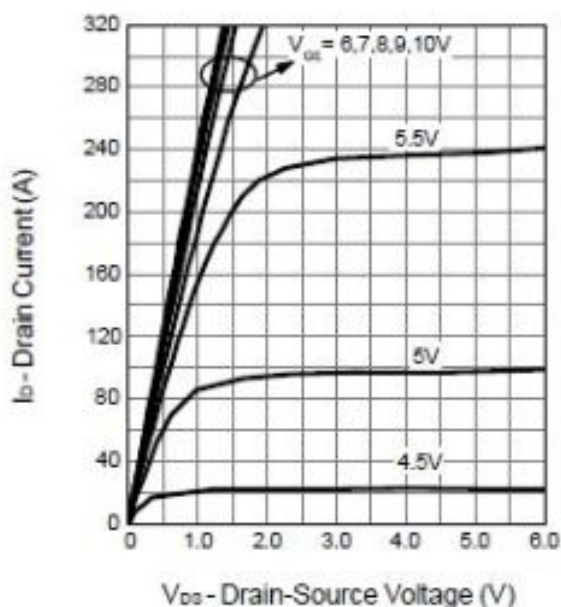
Thermal Transient Impedance



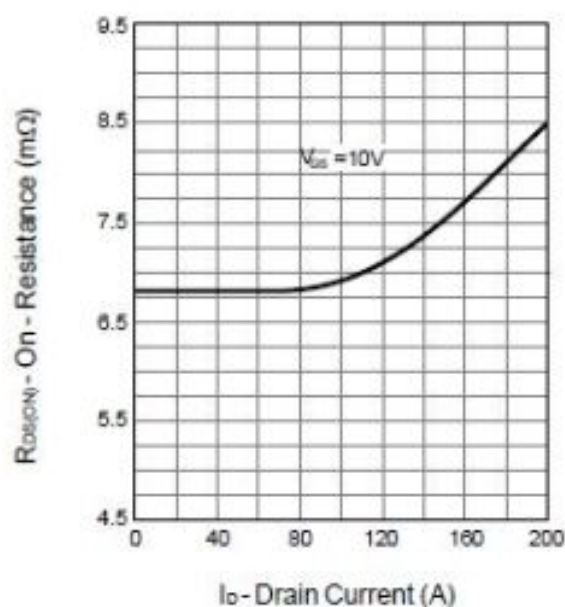
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文档。 [了解文档类型](#)

## Characteristics (Cont.)

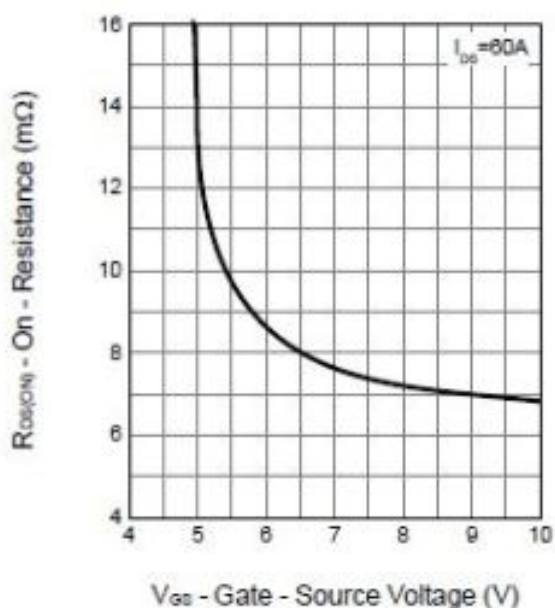
### Output Characteristics



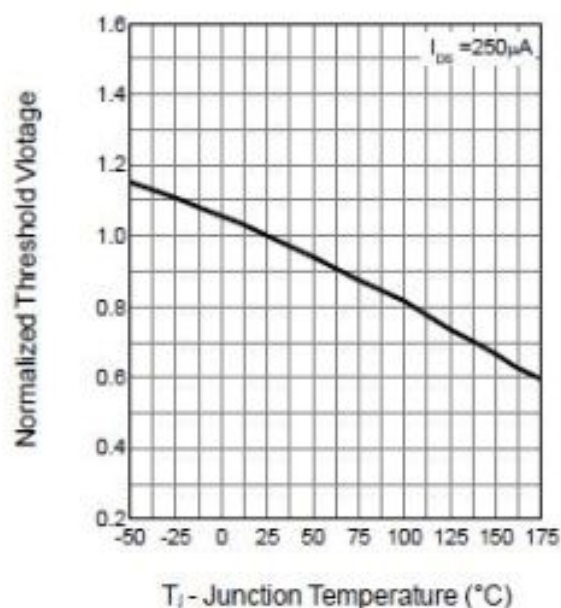
### Drain-Source On Resistance



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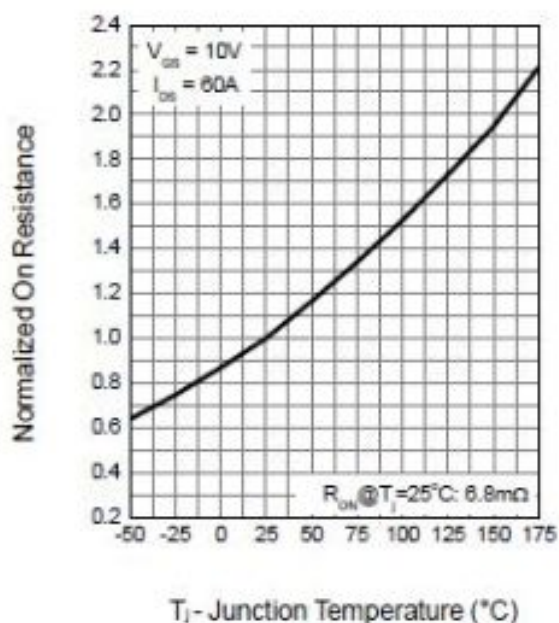


### Gate Threshold Voltage

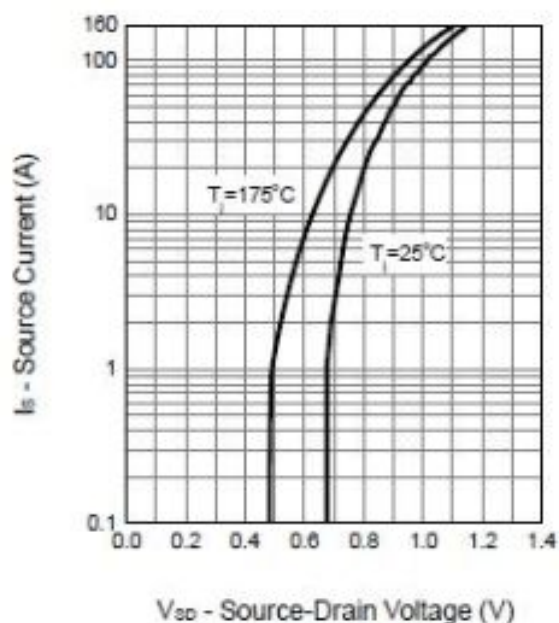


### Typical Operating Characteristics (Cont.)

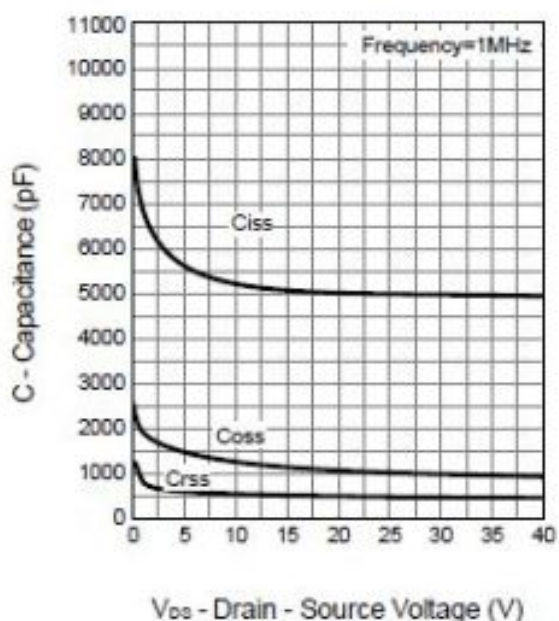
Drain-Source On Resistance



Source-Drain Diode Forward



Capacitance



Gate Charge

