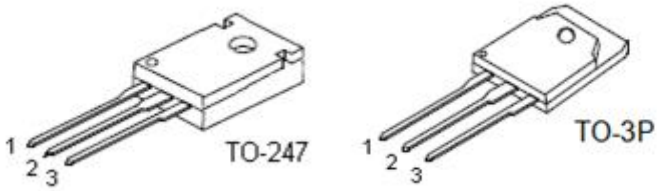
1. Features

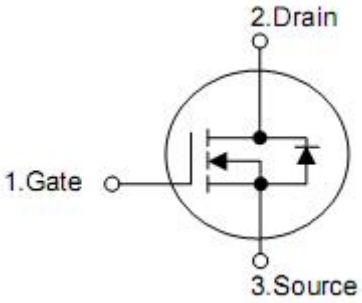
- $R_{DS(on)}$=4.0mΩ（typ.）@ V_{GS}=10V
- 100% avalanche tested
- Reliable and rugged
- Lead free and green device available（RoHS Compliant）

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°C,unless otherwise noted)

Parameter		Symbol	Rating		Units
			TO-220/ TO-263	TO-247/ TO-3P	
Drain-source voltage		V_{DSS}	80		V
Gate-source voltage		V_{GSS}	±25		V
Maximum junction temperature		T_J	175		ºC
Storage temperature range		T_{STG}	-55 to175		ºC
Diode continuous forward current	T_C=25ºC	I_S	150		A
Continuous drain current	T_C=25ºC	I_D	150		A
	T_C=100ºC		114		A
Pulse drain current*	T_C=25ºC	I_{DM}	660**		A
Avalanche energy,single pulsed	L=0.5mH	E_{AS}	1.1***		J
Maximum power dissipation	T_C=25 ºC	P_D	178	214	W
	T_C=100ºC		89	107	W

Note:* Repetitive rating;pulse width limited by junction temperature
** Drain current is limited by junction temperature
***VD=64V

5. Thermal characteristics

Parameter	Symbol	Rating	Unit
Thermal resistance,Junction-ambient	$R_{\theta JA}$	62.5	ºC/W
Thermal resistance,Junction-case	$R_{\theta JC}$	0.7	ºC/W

6. Electrical characteristics

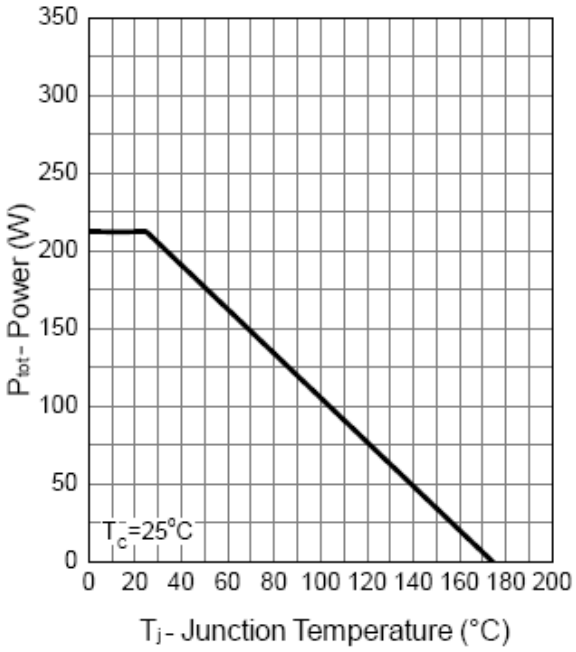
(T_A=25°C,unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-source breakdown voltage	BV_{DSS}	V_{GS}=0V,I_{DS}=250μA	80	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=80V, V_{GS}=0V	-	-	1	μA
		T_J=85°C	-	-	10	
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.0	3.0	4.0	V
Gate leakage current	I_{GSS}	V_{GS}=±25V, V_{DS}=0V	-	-	±100	nA
Drain-source on-state resistance	$R_{DS(on)}$*	V_{GS}=10V,I_D=85A	-	4.0	4.5	mΩ
Gate resistance	R_g	V_{DS}=0V, V_{GS}=0V,f=1MHz	-	1.8	-	Ω
Diode forward voltage	V_{SD}*	I_{SD}=85A, V_{GS}=0V	-	0.8	1.2	V
Reverse recovery time	t_{rr}	I_{SD}=85A , dI_{SD}/dt=100A/μs	-	30	-	nS
Reverse recovery charge	Q_{rr}		-	52	-	nC
Input capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V, f=1MHz	-	6109	-	pF
Output capacitance	C_{oss}		-	995	-	
Reverse transfer capacitance	C_{rss}		-	530	-	
Turn-on delay time	$t_{d(on)}$	V_{DD}=40V, I_{DS}=85A, R_G=6Ω,V_{GS}=10V	-	28	-	ns
Rise time	t_r		-	18	-	
Turn-off delay time	$t_{d(off)}$		-	42	-	
Fall time	t_f		-	54	-	
Total gate charge	Q_g	V_{DS}=64V, V_{GS}=10V I_{DS}=85A	-	152	-	nC
Gate-source charge	Q_{gs}		-	25	--	
Gate-drain charge	Q_{gd}		-	53	--	

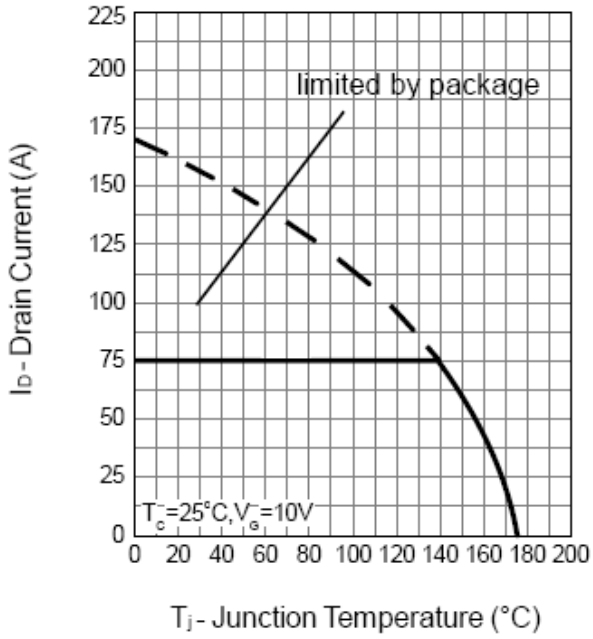
Note*:Pulse test;pulse width≤300us duty cycle≤2%.

7. Test circuits and waveforms

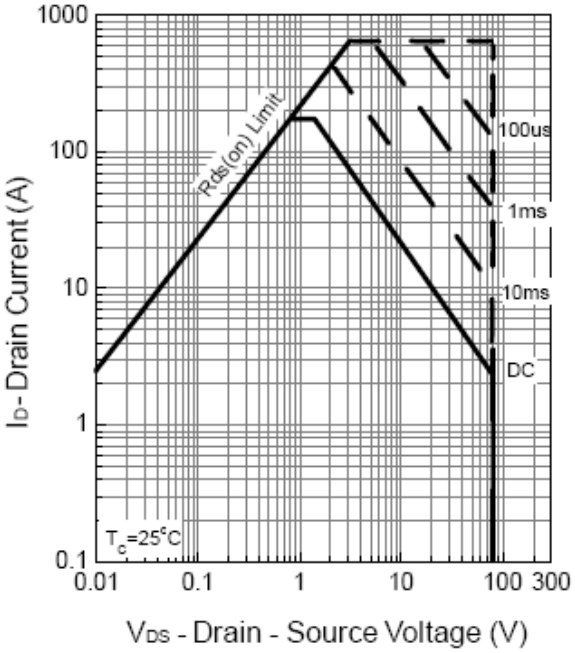
Power Dissipation



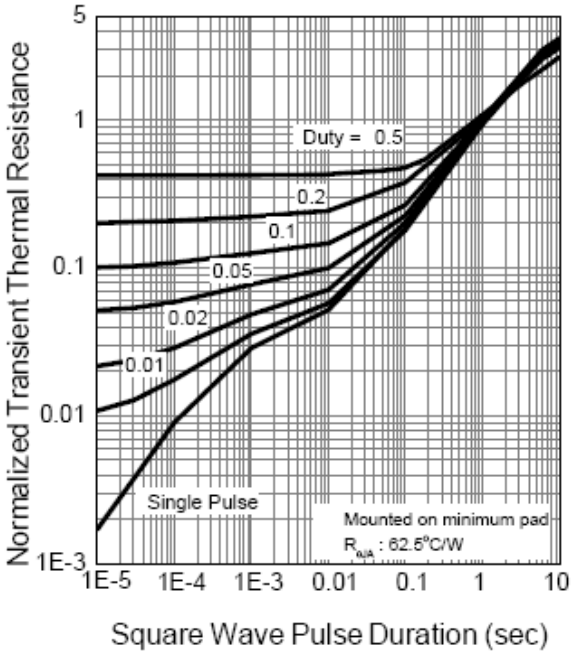
Drain Current



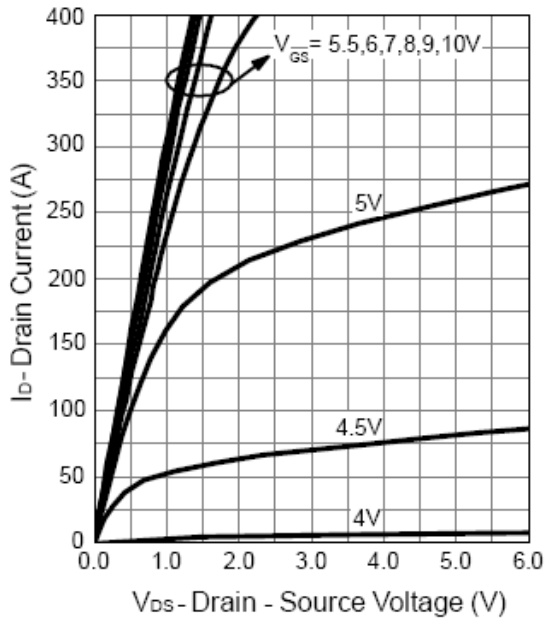
Safe Operation Area



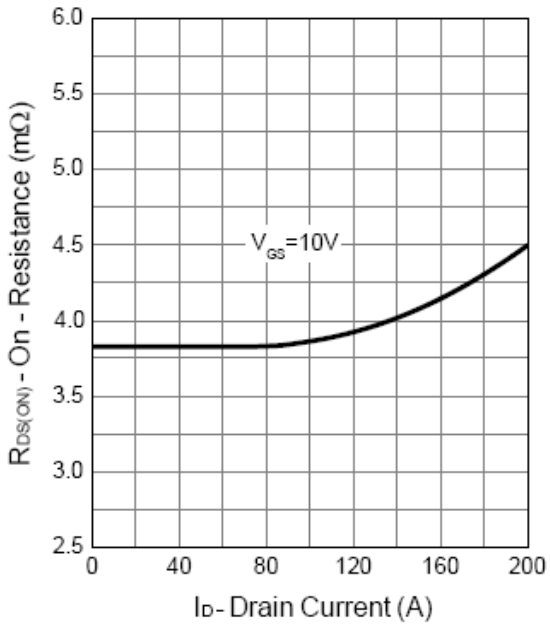
Thermal Transient Impedance



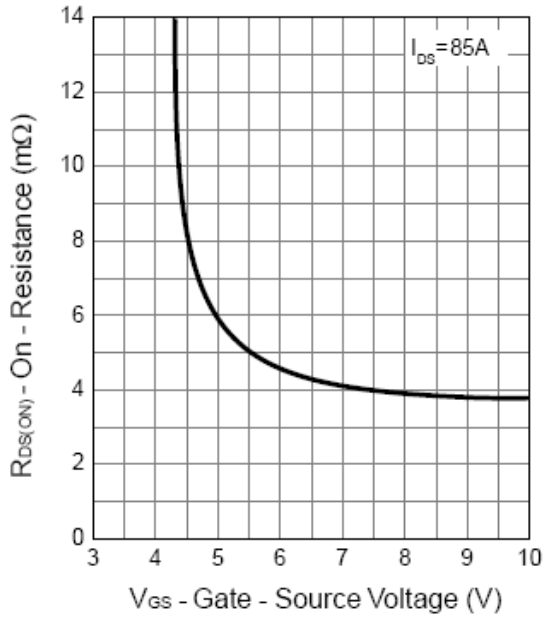
Output Characteristics



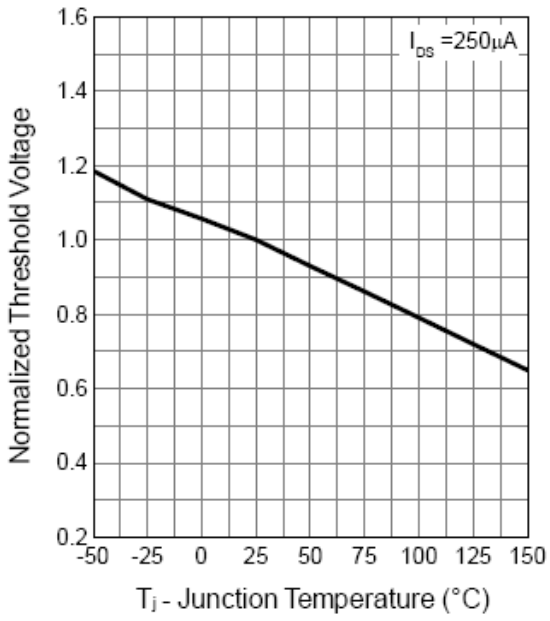
Drain-Source On Resistance



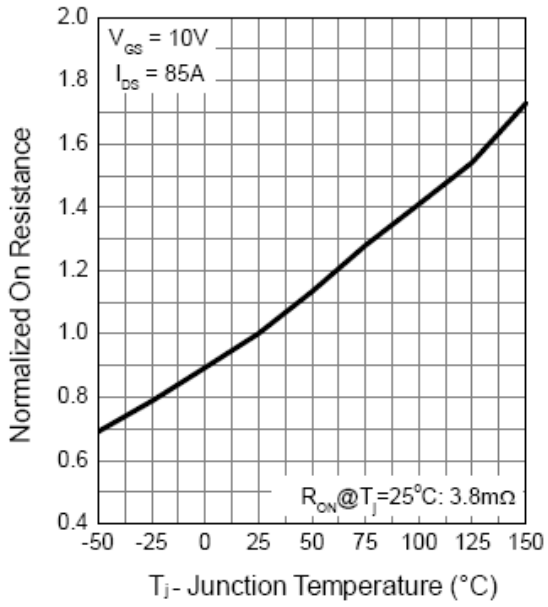
Gate-Source On Resistance



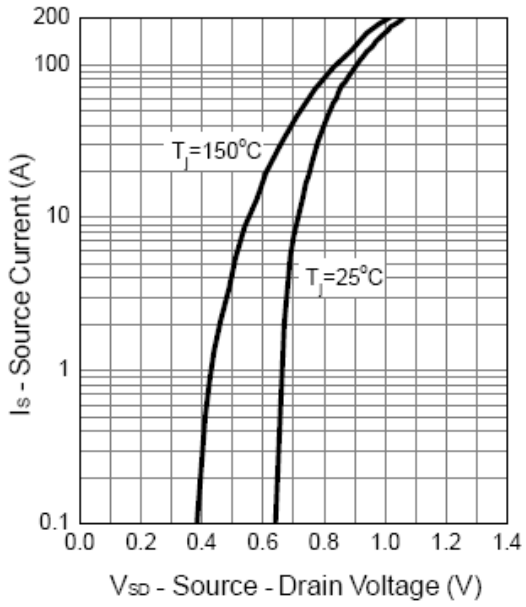
Gate Threshold Voltage



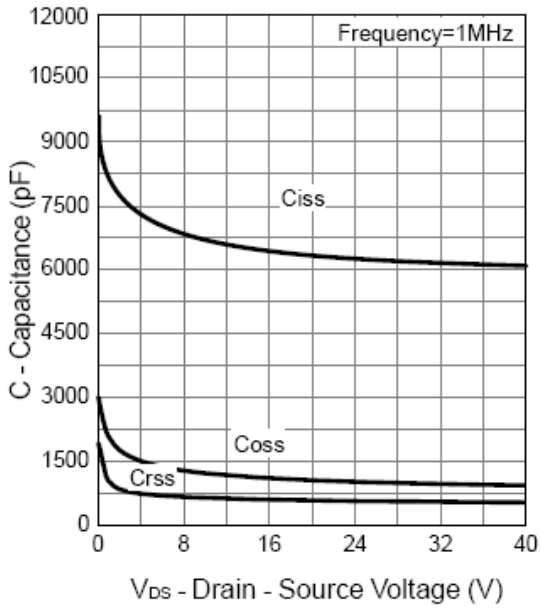
Drain-Source On Resistance



Source-Drain Diode Forward



Capacitance



Gate Charge