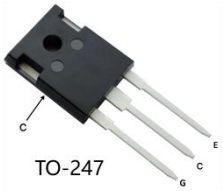
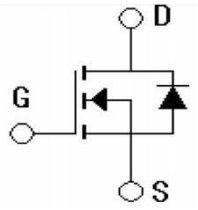
Features

- VDS=200V,ID=100A
  $R_{DS(on)} \leq 0.038\Omega$ @ V_{GS}=10V
- High density cell design for ultra low Rdson
- Low gate charge
- Improved dv/dt capability
- RoHS product



Applications

- Power switching application
- Isolated DC/DC converters in Telecom and Industrial
- Synchronous Rectification in DC/DC Converters



Absolute Ratings (Tc=25℃)

Parameter	Symbol		Limit	Unit
Drain-Source Voltage	V_{DSS}		200	V
Transient Gate-Source Voltage	V_{GSM}		±30	V
Continuous Gate-Source Voltage	V_{GSS}		±20	V
Drain Current-continuous	I_D	I_C=25℃	100	A
		I_C=100℃	80	A
Drain Current-pulse (note 1)	I_{DM}		400	A
Single Pulsed Avalanche Energy (note 2)	E_{AS}		560	mJ
Maximum Power Dissipation	P_D, T_C=25℃		250	W
	Derate above 25℃		2.0	W/℃
Operating and Storage Temperature Range	T_J ,T_{STG}		-55~+150	℃
Maximum Lead Temperature for Soldering Purposes	T_L		300	℃

Electrical Characteristics(T_{CASE}=25℃ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ.	Max	Units
Drain-Source Voltage	BV_{DSS}	I_D=250μA,V_{GS}=0V	200	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 100V,V_{GS}=0V	-	-	25	μA
Body Leakage Current	I_{GSS}	V_{GS}= ±20V， V_{DS}=0V	-	-	±100	nA
On-Characteristics						

Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	3	-	4.5	V
tatic Drain-Source On-Resistance	$R_{DS(ON)}$	V_{DS}=10V,I_D=50A	-	-	0.038	Ω
Forward Transconductance	g_{fs}	V_{DS}=50V,I_D=50A (note 4)	-	52	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V, f=1MHz	-	4400	-	pF
Output capacitance	C_{oss}		-	734	-	pF
Reverse transfer capacitance	C_{rss}		-	78	-	pF

Electrical Characteristics(T_{CASE}=25℃ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching-Characteristics						
Turn-On delay time	$t_{d(on)}$	V_{DD}= 100V,I_D=50A, R_G= 1.8Ω V_{GS}=10V (note 4,5)	-	76.6	-	ns
Turn-On rise time	t_r		-	120.6	-	ns
Turn-Off delay time	$t_{d(Off)}$		-	239	-	ns
Turn-Off rise time	t_f		-	184	-	ns
Total Gate Charge	Q_g	V_{DS}=200V, I_D=50A, V_{GS}=10V (note 4,5)	-	123	-	nC
Gate-Source charge	Q_{gs}		-	29.4	-	nC
Gate-Drain charge	Q_{gd}		-	71.25	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Drain-Source Diode Forward Current	V_{SD}	V_{GS}=0V,I_S=100A	-	-	1.3	V
Reverse recovery time	T_{rr}	I_S=50A, di/dt=100A/μs	-	267	-	ns
Reverse recovery charge	Q_{rr}		-	3.2	-	uC

Thermal Characteristic

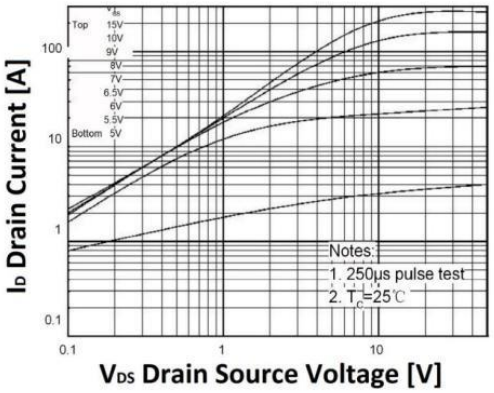
Parameter	Symbol	Value	Unit
Thermal Resistance,junction to Case	$R_{th(j-C)}$	0.50	℃/W
Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	40	℃/W

Notes:

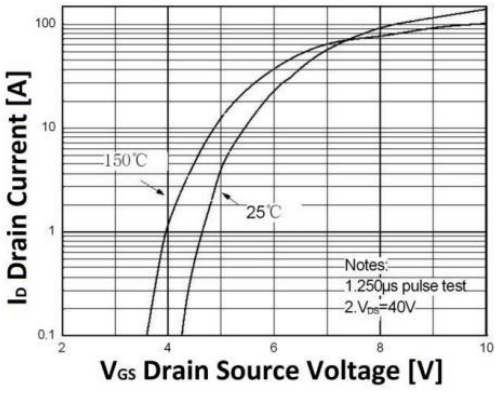
1. Repetitive rating; pulse width limited by max. junction temperature.
2. I_{AS}=50A, L=1.5mH, R_G=25 Ω,Starting T_J=25℃
3. I_{SD} ≤50A, di/dt = 486A/us, V_{DD} ≤ BV_{DSS}, Staring T_J <=150℃
4. Pulse Test：Pulse Width ≤300μs,Duty Cycle≤2%

Electrical Characteristics

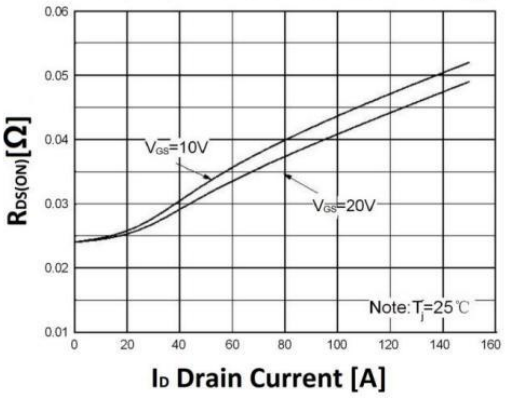
On-Region Characteristics



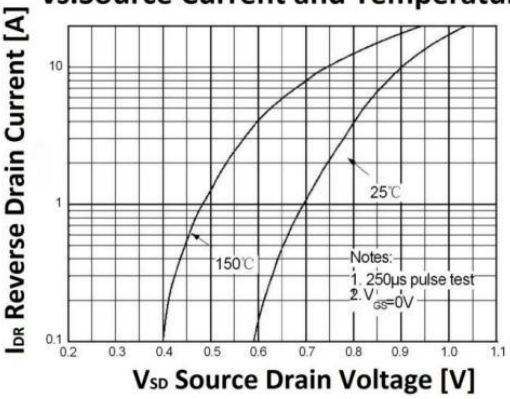
Transfer Characteristics



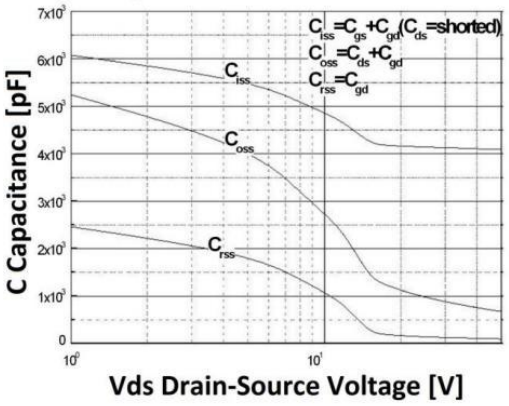
On-Resistance Variation vs. Drain Current and Gate Voltage



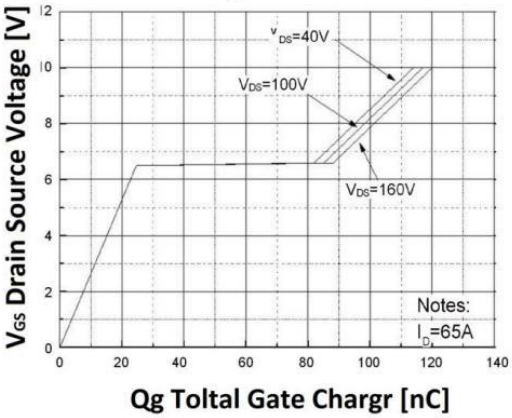
Body Diode Forward Voltage Variation vs.Source Current and Temperature



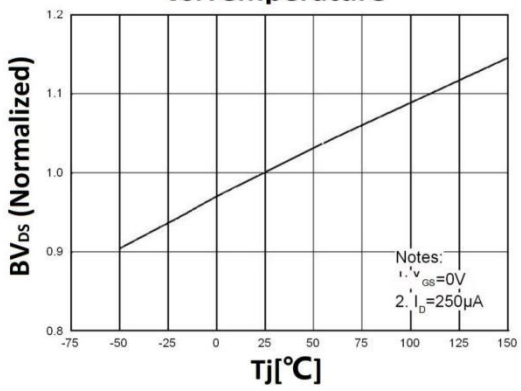
Capacitance Characteristics



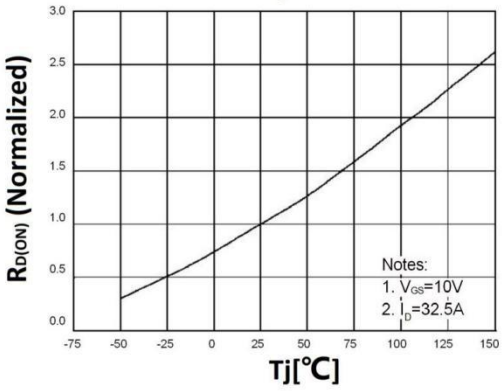
Gate Charge Characteristics



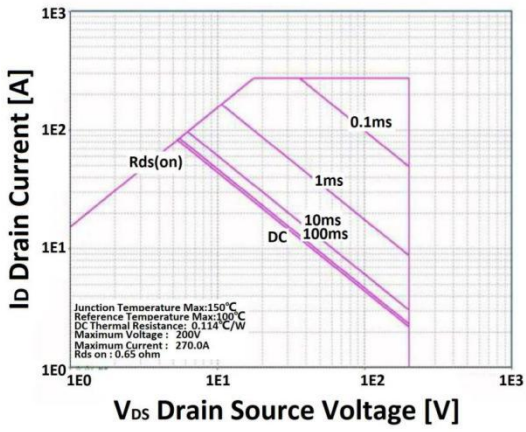
Breakdown Voltage Variation vs.Temperature



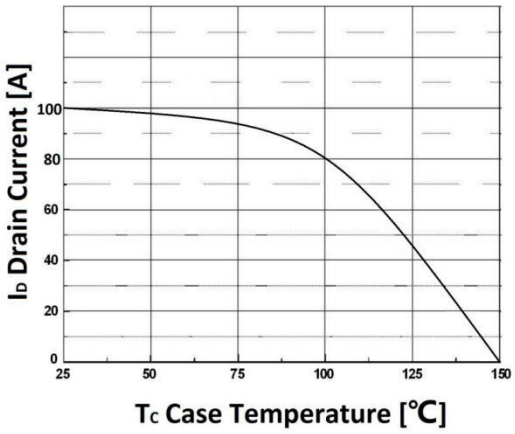
On-Resistance Variation vs.Temperature



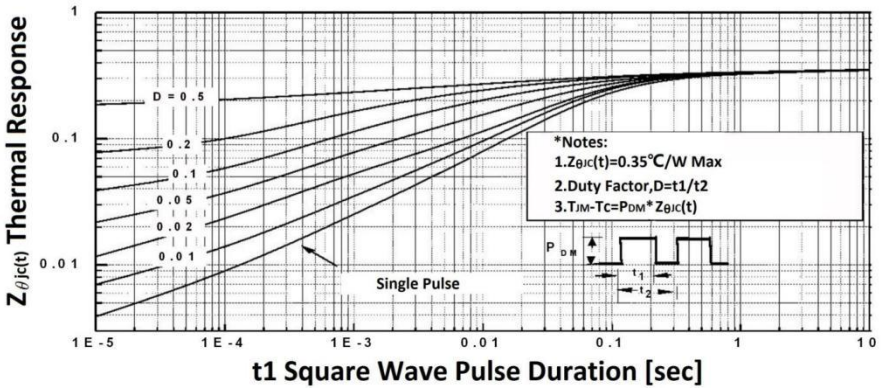
Maximum Safe Operating Area



Maximum Drain Current vs.Case Temperature



Transient Thermal Response Curve



Package Mechanical DATA