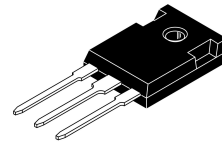
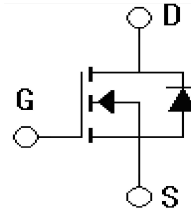


Features

- $V_{DS}=200V, I_D=100A$
 $R_{DS(on)}=23m\Omega @ V_{GS}=10V$
- High density cell design for ultra low R_{dson}
- Low gate charge
- Improved dv/dt capability
- RoHS product



TO-247



Applications

- Power Management for Inverter Systems

Absolute Ratings ($T_c=25^\circ C$)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	200	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current-continuous	I_D	100	A
Drain Current-pulse	I_{DM}	400	A
Single Pulsed Avalanche Energy	E_{AS}	833	mJ
Maximum Power Dissipation	PD $TC=25^\circ C$ $TC=100^\circ C$	375	W
		187.5	
Operating and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

Electrical Characteristics ($T_{CASE}=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	200	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	3.0	4.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=50A$	-	23	25	$m\Omega$

Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0MHz$	-	5871	-	pF
Output capacitance	C_{oss}		-	392	-	pF
Reverse transfer capacitance	C_{rss}		-	165	-	pF

Electrical Characteristics($T_{CASE}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching-Characteristics						
Turn-On delay time	$t_{d(on)}$	$V_{DS}=100V, I_D=50A,$ $V_{GS}=10V$ $R_G=4\Omega$	-	29	-	ns
Turn-On rise time	t_r		-	45	-	ns
Turn-Off delay time	$t_{d(off)}$		-	22	-	ns
Turn-Off rise time	t_f		-	41	-	ns
Total Gate Charge	Q_g	$V_{DS}=100V, I_D=50A,$ $V_{GS}=10V$	-	130	-	nC
Gate-Source charge	Q_{gs}		-	22	-	nC
Gate-Drain charge	Q_{gd}		-	38	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	V_{SD}	$V_{GS}=0V, I_S=50A$		0.85	1.2	V
Diode Forward Current	I_S	$TC=25^{\circ}C$	-	-	100	A
Reverse recovery time	T_{rr}	$I_S=50A,$ $di/dT=100A/\mu S$	-	80		nS
Reverse recovery charge	Q_{rr}		-	160		nC

Thermal Characteristic

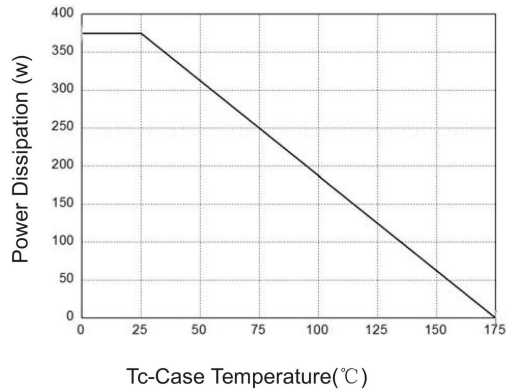
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.4	$^{\circ}C/W$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	40	$^{\circ}C/W$

Notes:

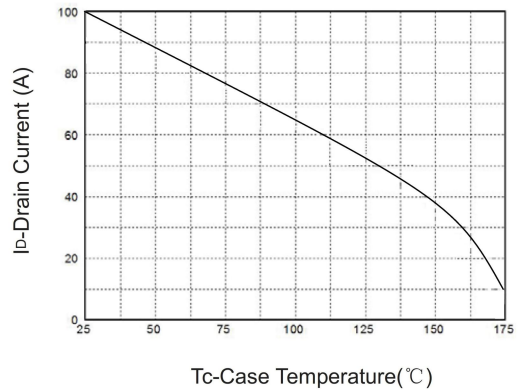
1. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
2. Limited by T_{jmax} , starting $T_j=25^{\circ}C, L=0.5mH, V_D=100V, V_{GS}=10V$

Electrical Characteristics

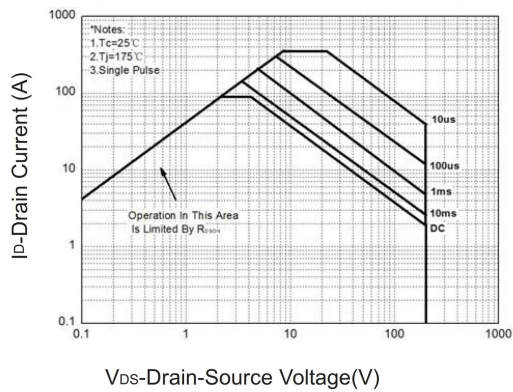
Power Dissipation



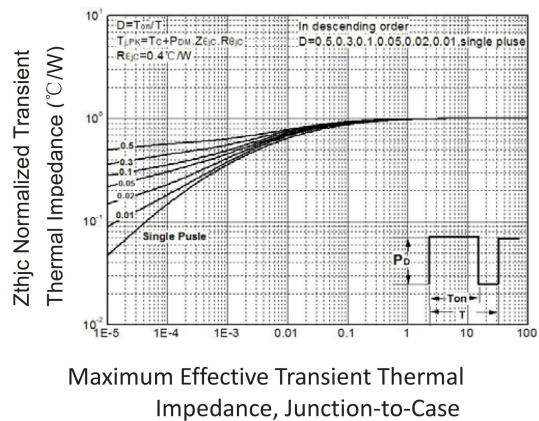
Drain Current



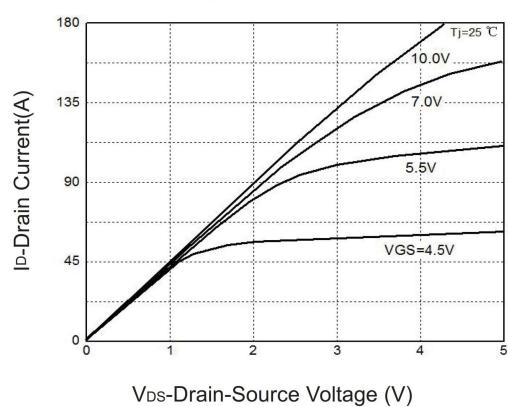
Safe Operation Area



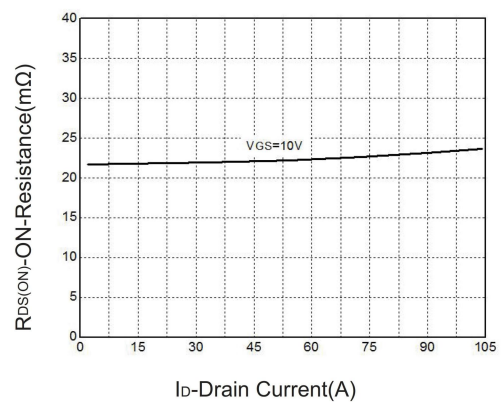
Thermal Transient Impedance



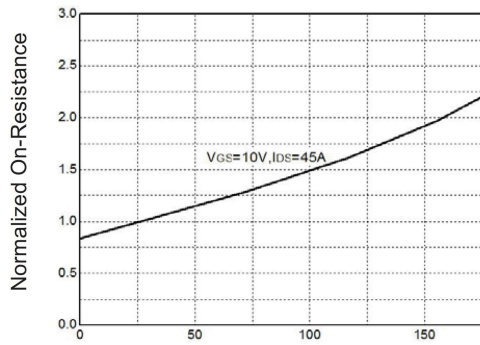
Output Characteristics



Drain-Source On Resistance

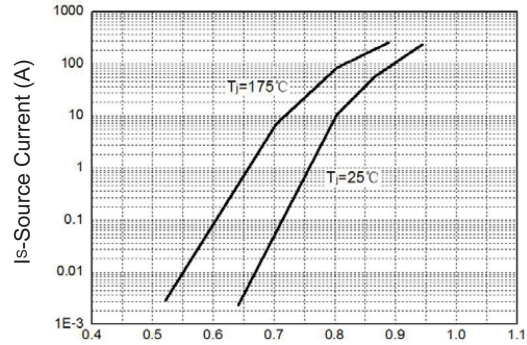


On-Resistance vs. Temperature



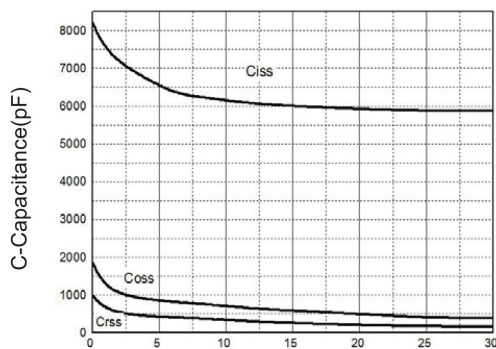
T_j-Junction Temperature (°C)

Source-Drain Diode Forward



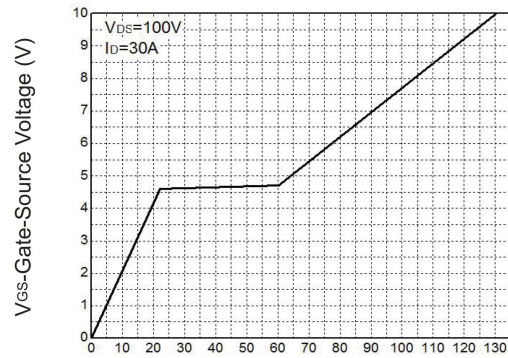
V_{sd}, Source-Drain Voltage(V)

Capacitance Characteristics



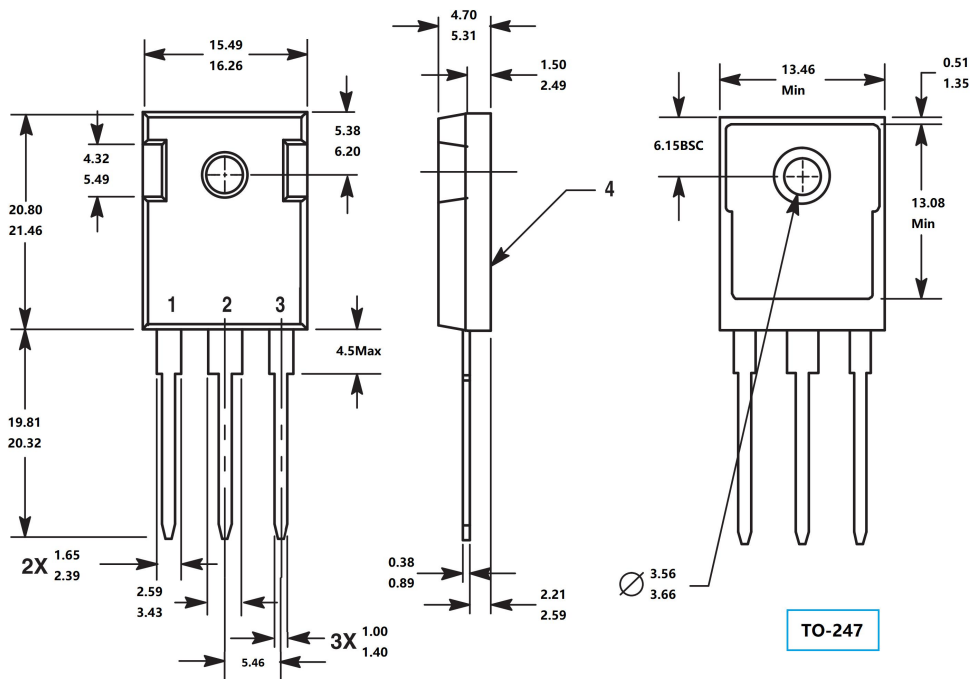
V_{ds}-Drain-Source Voltage (V)

Gate Charge Characteristics



Q_g-Gate Charge (nC)

Package Mechanical DATA



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