

**Features**

- Advanced Shield Gate Trench technology
- Super Low Gate Charge
- High-Speed Switching
- 100% EAS Guaranteed
- Green Device Available

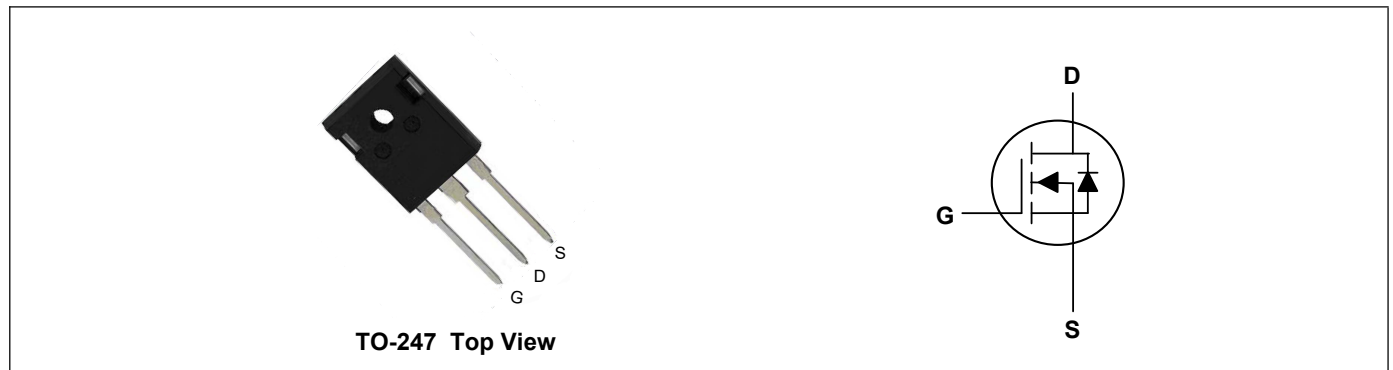
**Applications**

- High Frequency Point-of-Load, Synchronous Buck Converter
- Networking DC-DC Power System
- Load Switch

**Product Summary**



$V_{DS}$	150	V
$I_D$	200	A
$R_{DS(ON)}$ (at $V_{GS}=10V$ )	4.0	m $\Omega$



**Absolute Maximum Ratings( $T_C=25^\circ C$ , unless otherwise noted)**

Parameter	Symbol	Rating	Units
Drain-Source Voltage	$V_{DS}$	150	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current <sup>1</sup>	$I_D$	200	A
Continuous Drain Current <sup>1</sup>	$I_D$	122	A
	$T_C=100^\circ C$		
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	768	A
Single Pulse Avalanche Energy <sup>3</sup>	$E_{AS}$	720	mJ
Total Power Dissipation <sup>4</sup>	$P_D$	820	W
Storage Temperature Range	$T_{STG}$	-55 to 150	$^\circ C$
Operating Junction Temperature Range	$T_J$	-55 to 150	$^\circ C$

**Thermal Characteristics**

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient <sup>1</sup>	$R_{\theta JA}$	---	62.5	$^\circ C/W$
Thermal Resistance Junction-Case <sup>1</sup>	$R_{\theta JC}$	---	0.3	$^\circ C/W$

**Electrical Characteristics (T<sub>J</sub>=25°C, unless otherwise noted)**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	150	---	---	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =20A	---	3.4	4.0	mΩ
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	2	---	4	V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =150V, V <sub>GS</sub> =0V	---	---	1	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	---	---	±100	nA
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =75V, V <sub>GS</sub> =10V, I <sub>D</sub> =20A	---	136	---	nC
Gate-Source Charge	Q <sub>gs</sub>		---	18	---	
Gate-Drain Charge	Q <sub>gd</sub>		---	12	---	
Turn-On Delay Time	T <sub>d(on)</sub>	V <sub>DD</sub> =75V, V <sub>GS</sub> =10V, R <sub>G</sub> =10Ω, I <sub>D</sub> =20A	---	30	---	ns
Rise Time	T <sub>r</sub>		---	25	---	
Turn-Off Delay Time	T <sub>d(off)</sub>		---	80	---	
Fall Time	T <sub>f</sub>		---	46	---	
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =75V, V <sub>GS</sub> =0V, f=1MHz	---	9200	---	pF
Output Capacitance	C <sub>oss</sub>		---	870	---	
Reverse Transfer Capacitance	C <sub>rss</sub>		---	25	---	

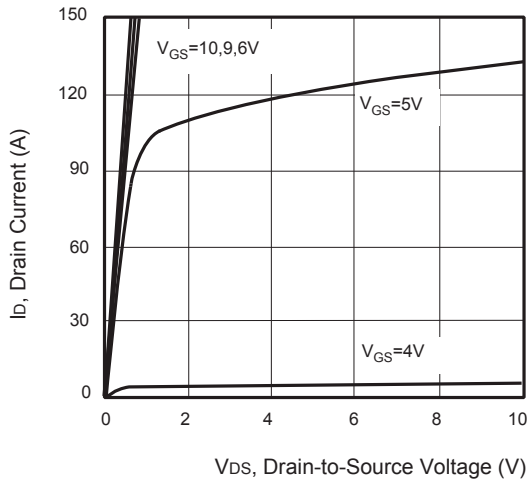
**Drain-Source Diode Characteristics**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Continuous Source Current <sup>1</sup>	I <sub>S</sub>		---	---	200	A
Diode Forward Voltage <sup>2</sup>	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =20A, T <sub>J</sub> =25°C	---	---	1.5	V

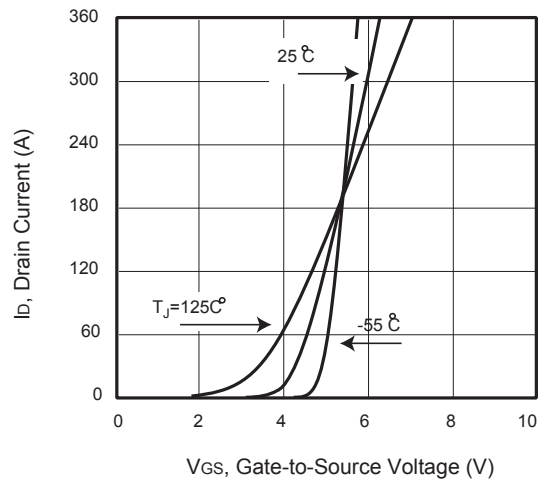
**Note:**

- 1.The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper.
- 2.The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%
- 3.The EAS data shows Max. rating. The test condition is V<sub>DD</sub>=50V, R<sub>G</sub>=25Ω, L=0.4mH
- 4.The power dissipation is limited by 150°C junction temperature

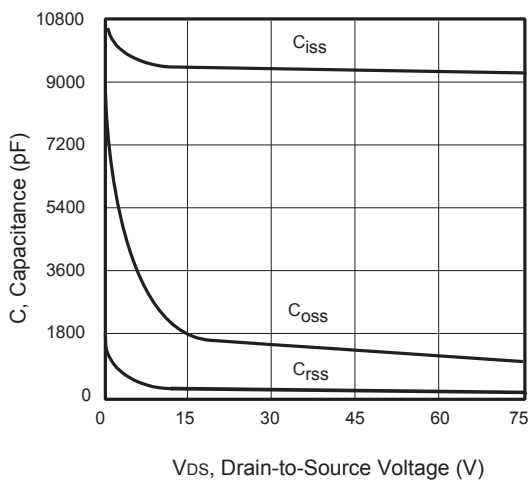
**Typical Characteristics**



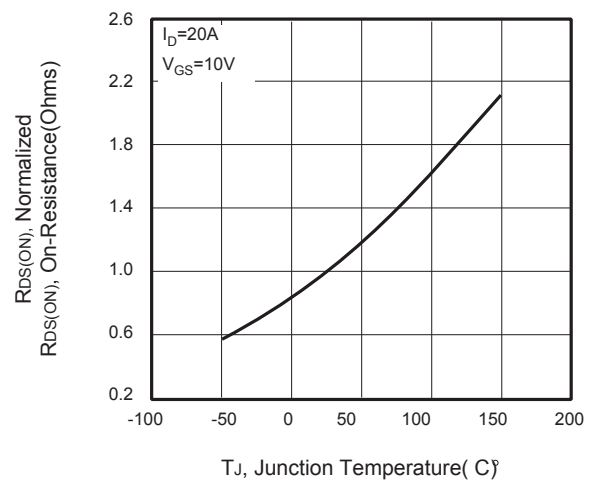
**Figure 1. Output Characteristics**



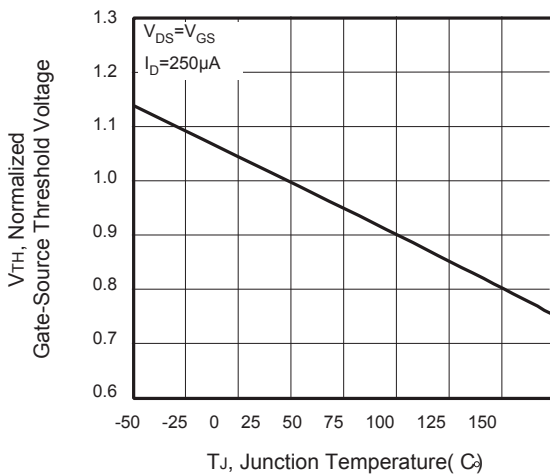
**Figure 2. Transfer Characteristics**



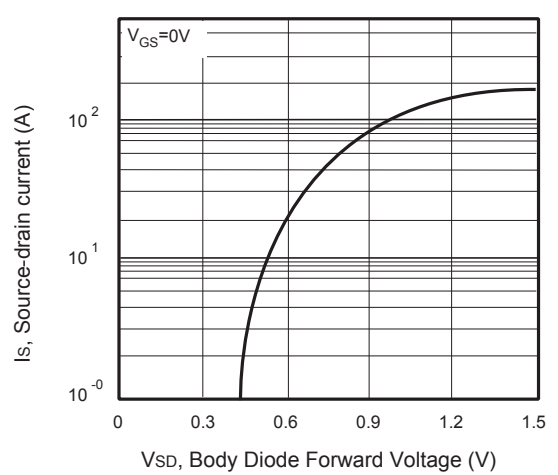
**Figure 3. Capacitance**



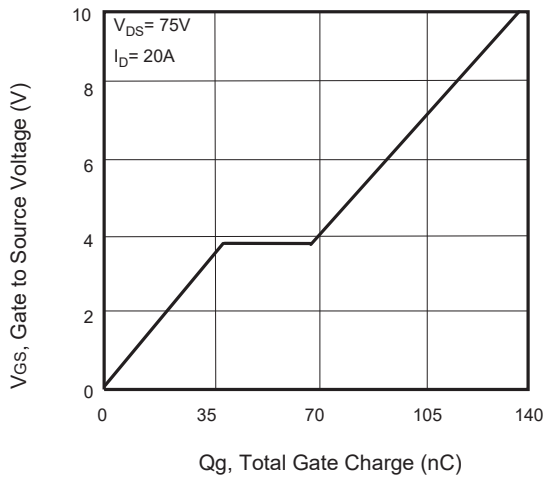
**Figure 4. On-Resistance Variation with Temperature**



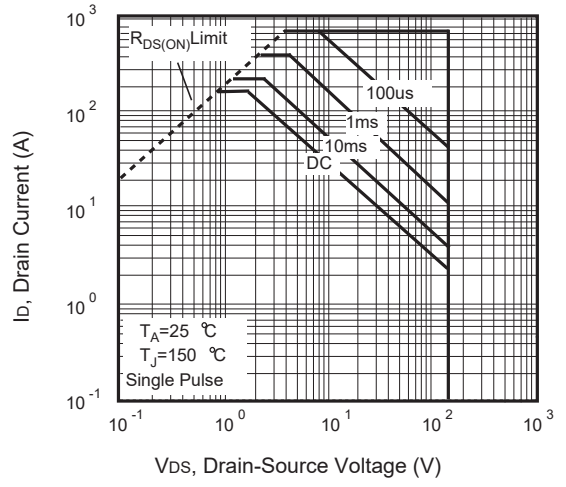
**Figure 5. Gate Threshold Variation with Temperature**



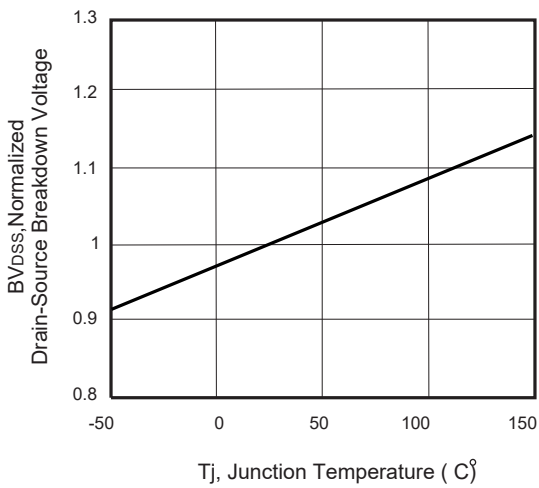
**Figure 6. Body Diode Forward Voltage Variation with Source Current**



**Figure 7. Gate Charge**

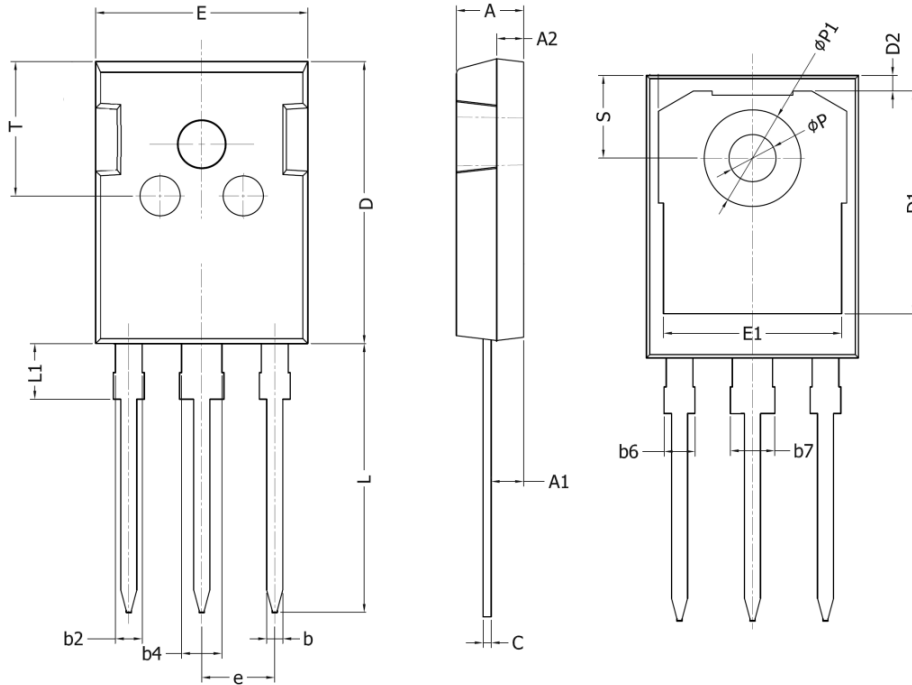


**Figure 8. Maximum Safe Operating Area**



**Figure 9. Breakdown Voltage Variation VS Temperature**

**TO-247 Package Outline Dimensions**



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	4.90	5.20
A1	2.31	2.51
A2	1.9	2.1
b	1.16	1.26
b2	1.96	2.06
b4	2.96	3.06
b6	-	2.25
b7	-	3.25
C	0.59	0.66
D	20.90	21.20
D1	16.25	16.85
D2	1.05	1.35
E	15.75	16.10
E1	13.00	13.60
e	5.436 BSC	
L	19.80	20.20
L1	-	4.30
P	3.40	3.60
P1	7.00	7.40
S	6.05	6.25
T	9.80	10.20