

Features

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

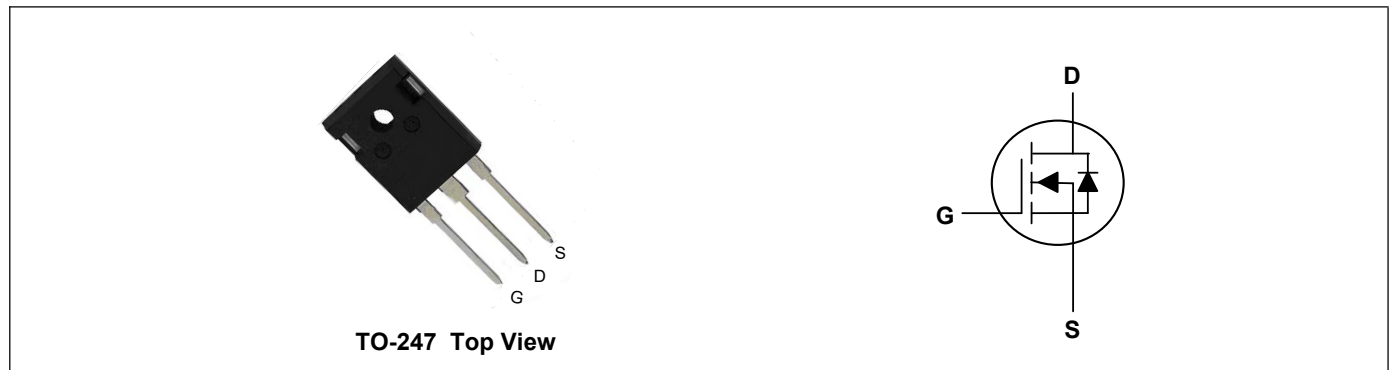
Applications

- 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 $V_{GS}=10V$)	4.5	m Ω



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}	± 20	V
Continuous Drain Current ¹	I_D	200	A
Continuous Drain Current ¹	I_D	122	A
	$T_C=100^\circ C$		
Pulsed Drain Current ²	I_{DM}	768	A
Single Pulse Avalanche Energy ³	E_{AS}	720	mJ
Total Power Dissipation ⁴	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 ¹	$R_{\theta JA}$	---	62.5	$^\circ C/W$
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	---	0.3	$^\circ C/W$

Electrical Characteristics (T_J=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	150	---	---	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =20A	---	3.8	4.5	mΩ
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250uA	2	3	4	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =150V, V _{GS} =0V	---	---	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
Total Gate Charge	Q _g	V _{DS} =75V, V _{GS} =10V, I _D =20A	---	64	---	nC
Gate-Source Charge	Q _{gs}		---	18	---	
Gate-Drain Charge	Q _{gd}		---	12	---	
Turn-On Delay Time	T _{d(on)}	V _{DD} =75V, V _{GS} =10V, R _G =10Ω, I _D =20A	---	30	---	ns
Rise Time	T _r		---	25	---	
Turn-Off Delay Time	T _{d(off)}		---	80	---	
Fall Time	T _f		---	46	---	
Input Capacitance	C _{iss}	V _{DS} =75V, V _{GS} =0V, f=1MHz	---	3200	---	pF
Output Capacitance	C _{oss}		---	730	---	
Reverse Transfer Capacitance	C _{rss}		---	15	---	

Drain-Source Diode Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Continuous Source Current ¹	I _S		---	---	200	A
Diode Forward Voltage ²	V _{SD}	V _{GS} =0V, I _S =20A, T _J =25°C	---	---	1.5	V

Note:

- 1.The data tested by surface mounted on a 1 inch² 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_{DD}=50V, R_G=25Ω, L=0.4mH
- 4.The power dissipation is limited by 150°C junction temperature

Typical Characteristics

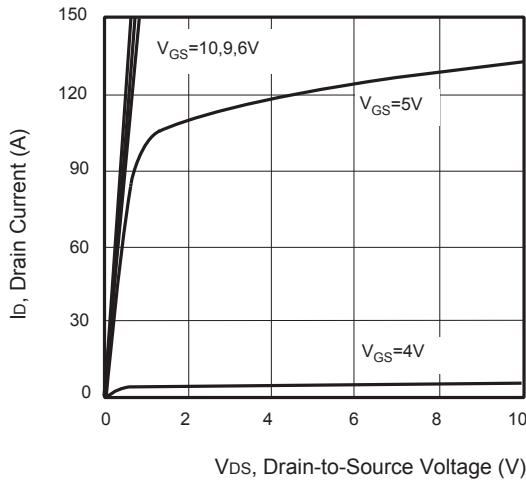


Figure 1. Output Characteristics

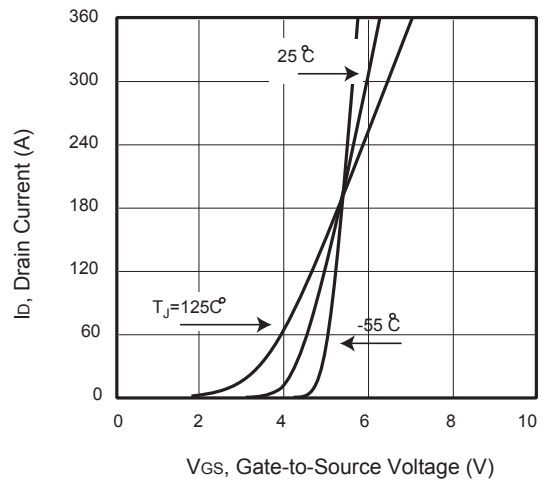


Figure 2. Transfer Characteristics

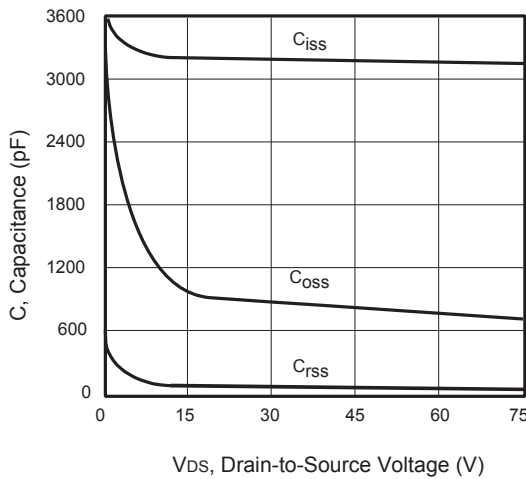


Figure 3. Capacitance

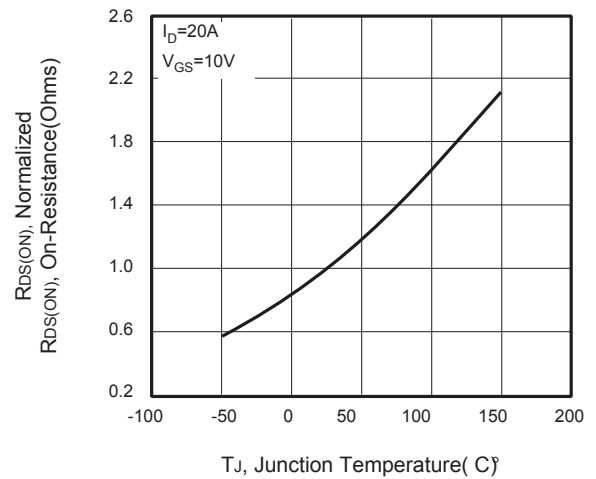


Figure 4. On-Resistance Variation with Temperature

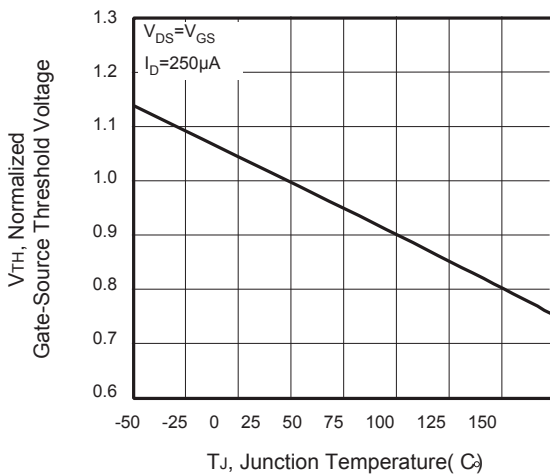


Figure 5. Gate Threshold Variation with Temperature

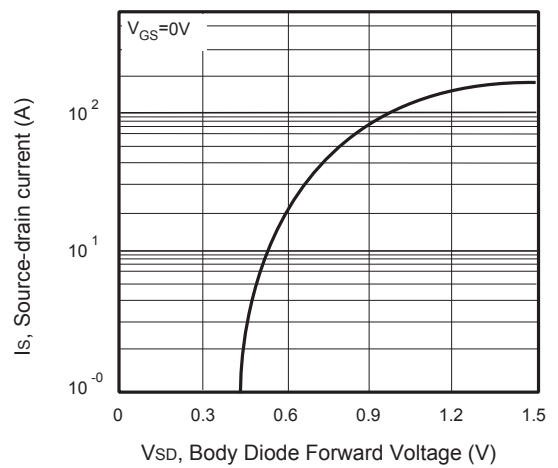


Figure 6. Body Diode Forward Voltage Variation with Source Current

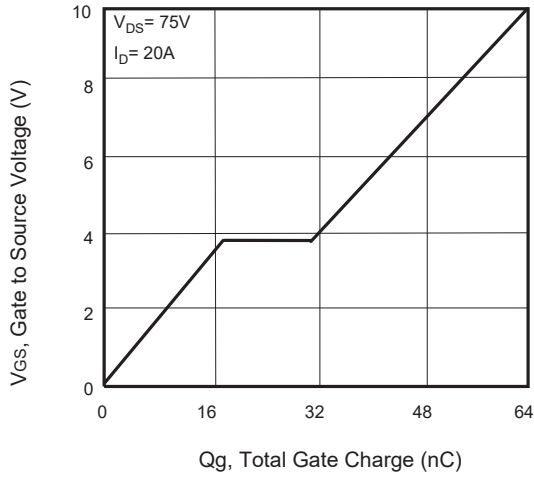


Figure 7. Gate Charge

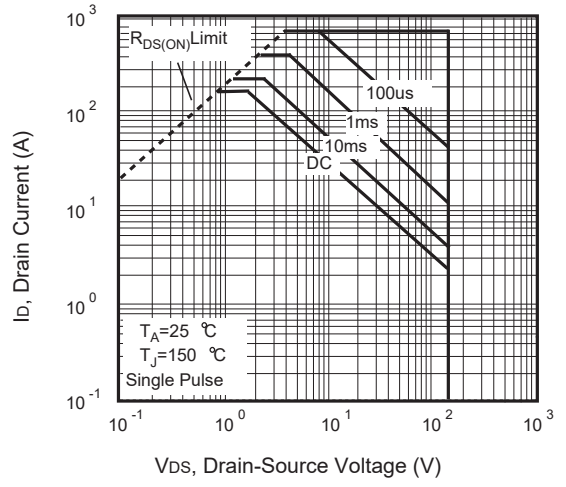


Figure 8. Maximum Safe Operating Area

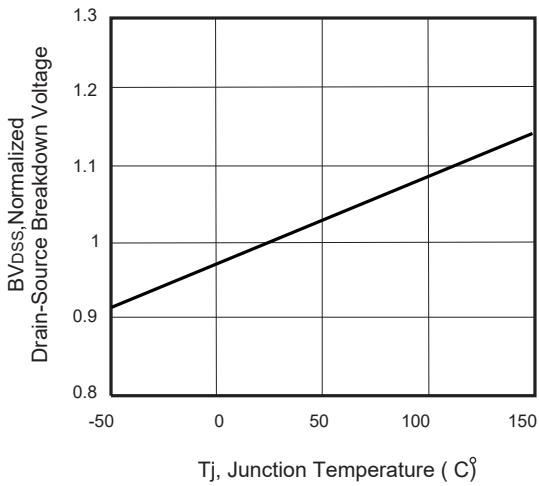
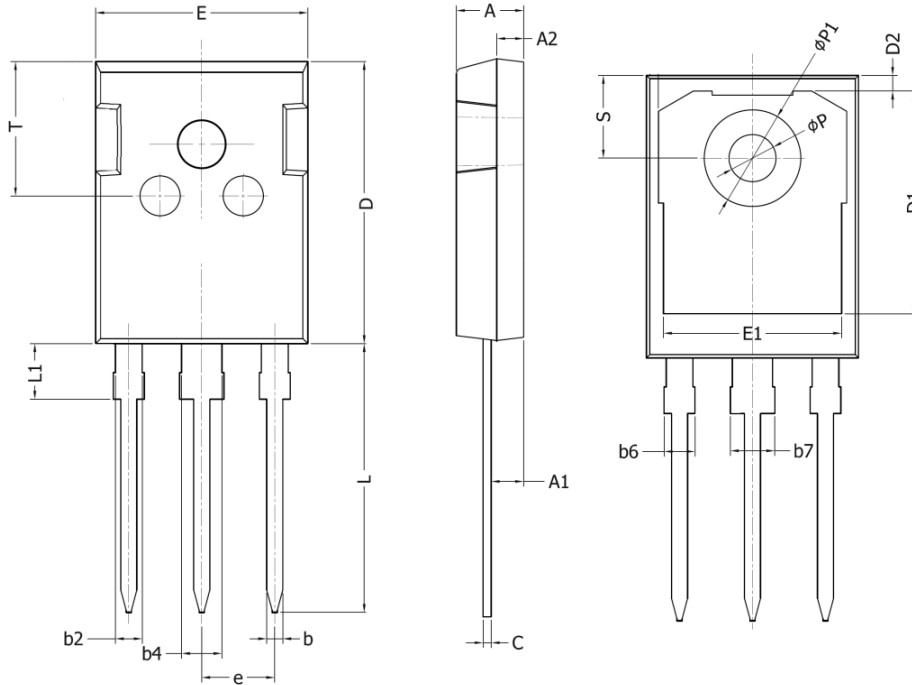


Figure 9. Breakdown Voltage Variation VS Temperature

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