

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100V	2.6mΩ@10V	230A

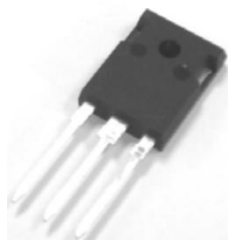
Feature

- Very low on-resistance R_{dson}
- Excellent gate Charge x R_{dson} product(FOM)

Application

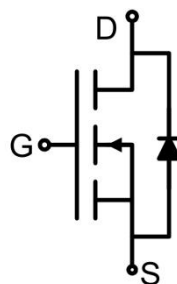
- DC/DC converter
- Ideal for high-frequency switching and synchronous rectification

Package



TO-247AB

Circuit diagram



Marking



Absolute maximum ratings (T_C=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	100	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	230	A
Drain Current-Continuous(T _C =100 °C)	I _D (100 °C)	165	A
Pulsed Drain Current	I _{DM}	920	A
Power Dissipation	P _D	300	W
Thermal Resistance,Junction-to-Case	R _{θJC}	0.5	°C/W
Single pulse avalanche energy	E _{AS}	2300	mJ
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

Electrical characteristics (T_C=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =500μA	100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =100V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage ¹⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =500μA	2.0	3.0	4.0	V
Drain-source on-resistance ¹⁾	R _{DS(on)}	V _{GS} =10V, I _D =115A		2.15	2.6	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =115A		90		S
Dynamic characteristics²⁾						
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f =1MHz		14000		pF
Output Capacitance	C _{oss}			1100		
Reverse Transfer Capacitance	C _{rss}			60		
Total Gate Charge	Q _g	V _{DS} =50V, V _{GS} =10V, I _D =100A		240		nC
Gate-Source Charge	Q _{gs}			62		
Gate-Drain Charge	Q _{gd}			73		
Turn-on delay time	t _{d(on)}	V _{DD} =50V, V _{GS} =10V, I _D =115A, R _{GEN} =1.6Ω		34		nS
Turn-on rise time	t _r			27		
Turn-off delay time	t _{d(off)}			78		
Turn-off fall time	t _f			30		
Source-Drain Diode characteristics						
Diode Forward Current	I _S				230	A
Diode Forward voltage ¹⁾	V _{DS}	V _{GS} =0V, I _S =115A			1.2	V
Reverse Recovery Time	t _{rr}	T _J = 25°C, I _F =115A di/dt = 100A/μs ¹⁾		101		nS
Reverse Recovery Charge	Q _{rr}			280		nC

Notes:

1) Pulse Test: Pulse Width < 300μs, Duty Cycle ≤2%.

2) Guaranteed by design, not subject to production testing.

Typical Characteristics

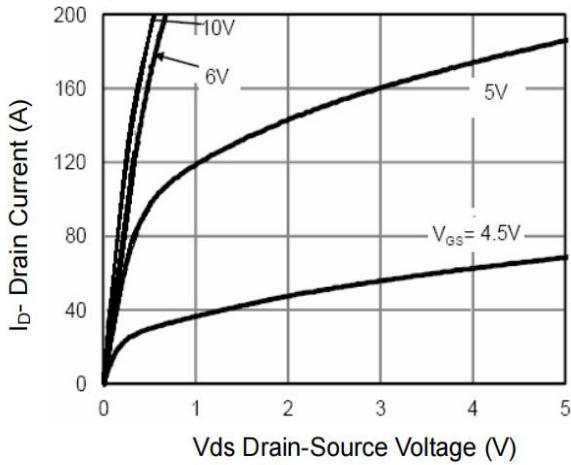


Figure 1 Output Characteristics

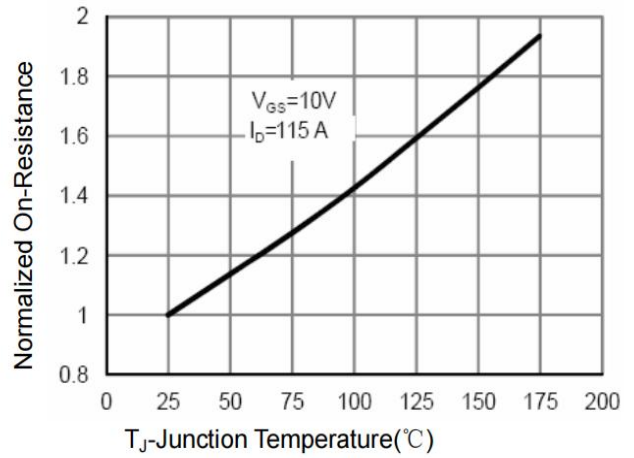


Figure 2 Rdson-Junction Temperature

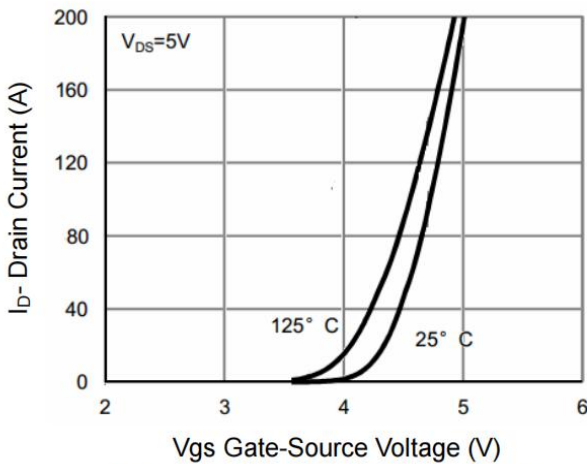


Figure 3 Transfer Characteristics

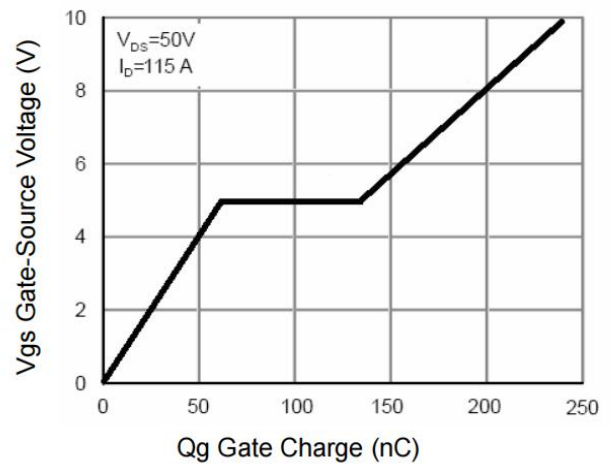


Figure 4 Gate Charge

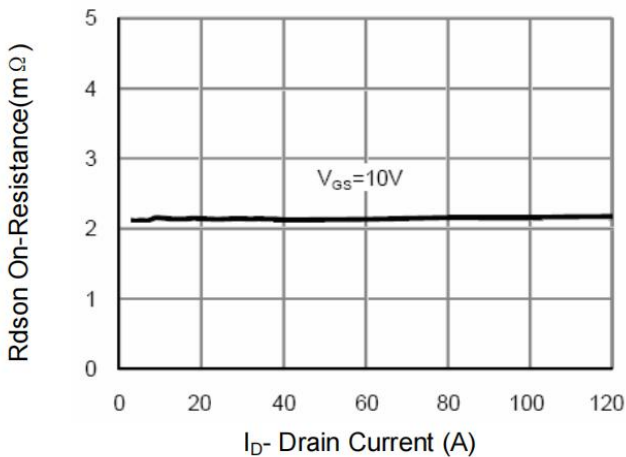


Figure 5 Rdson- Drain Current

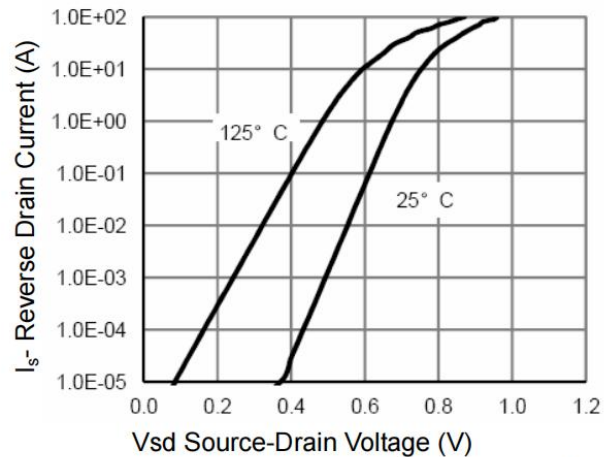


Figure 6 Source- Drain Diode Forward

Typical Characteristics

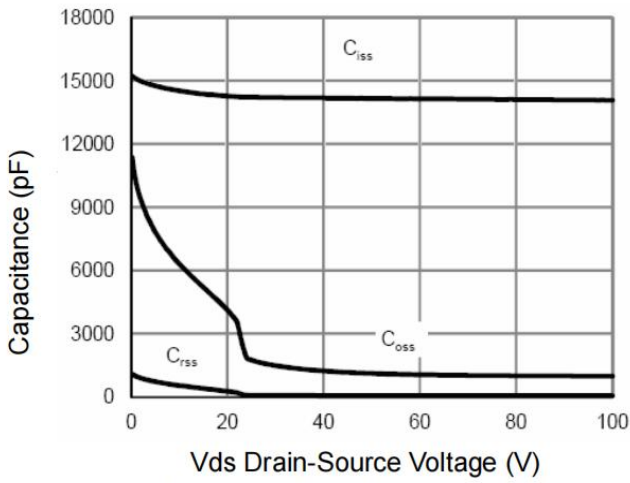


Figure 7 Capacitance vs Vds

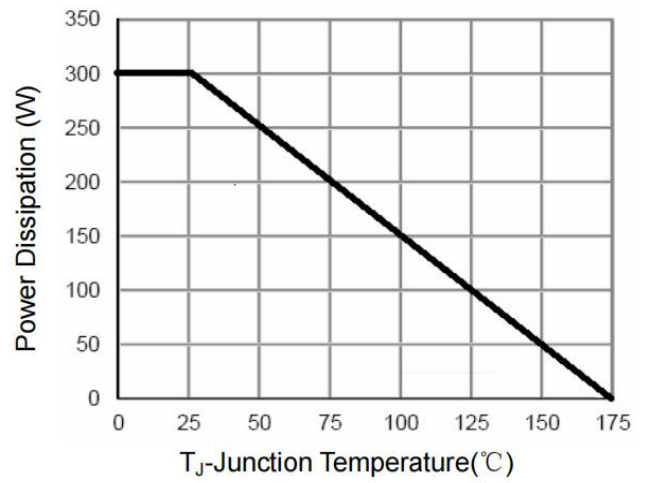


Figure 8 Power De-rating

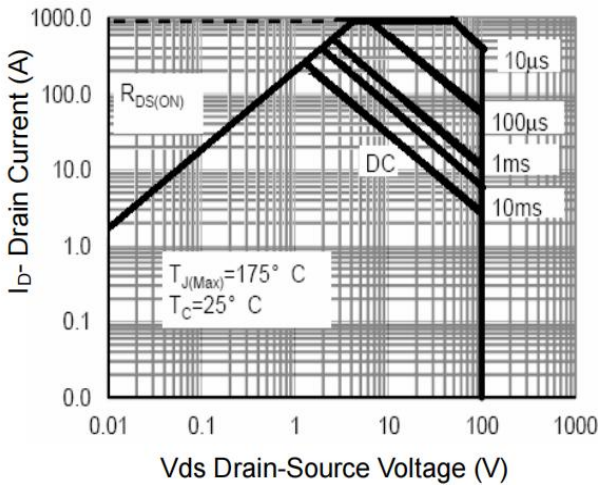


Figure 9 Safe Operation Area

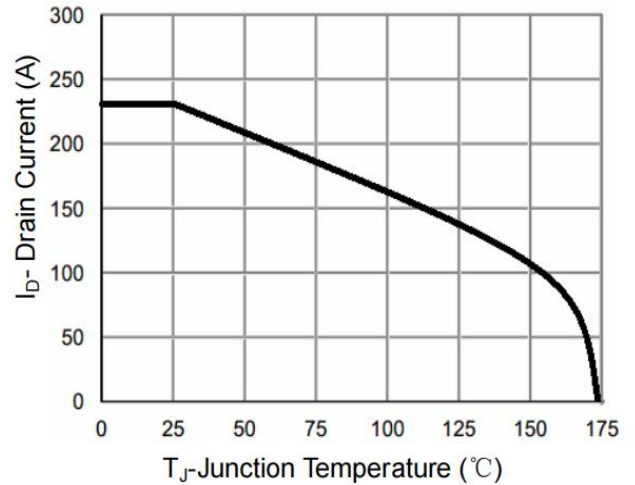


Figure 10 Current De-rating

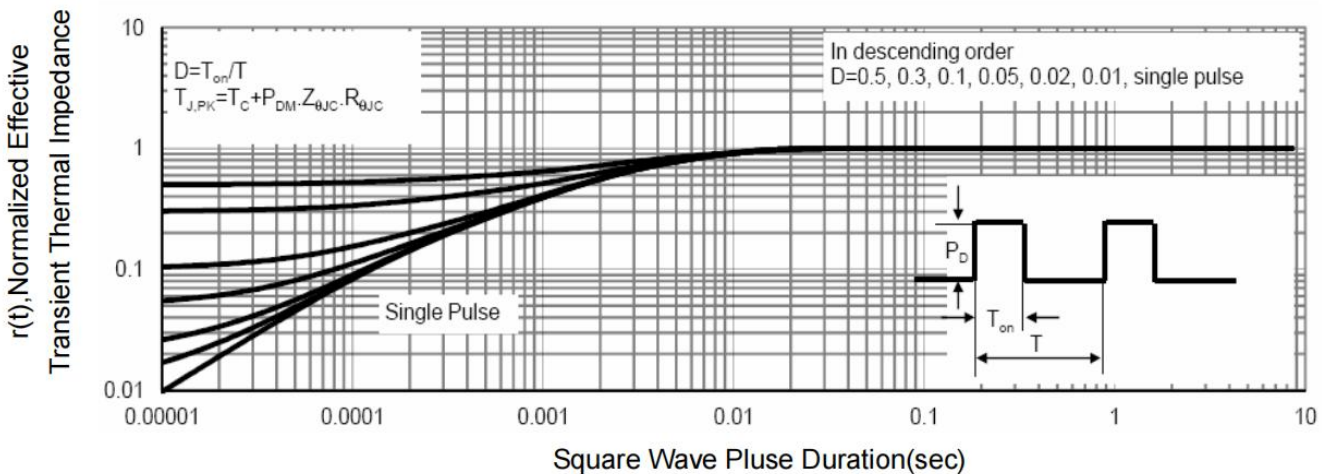
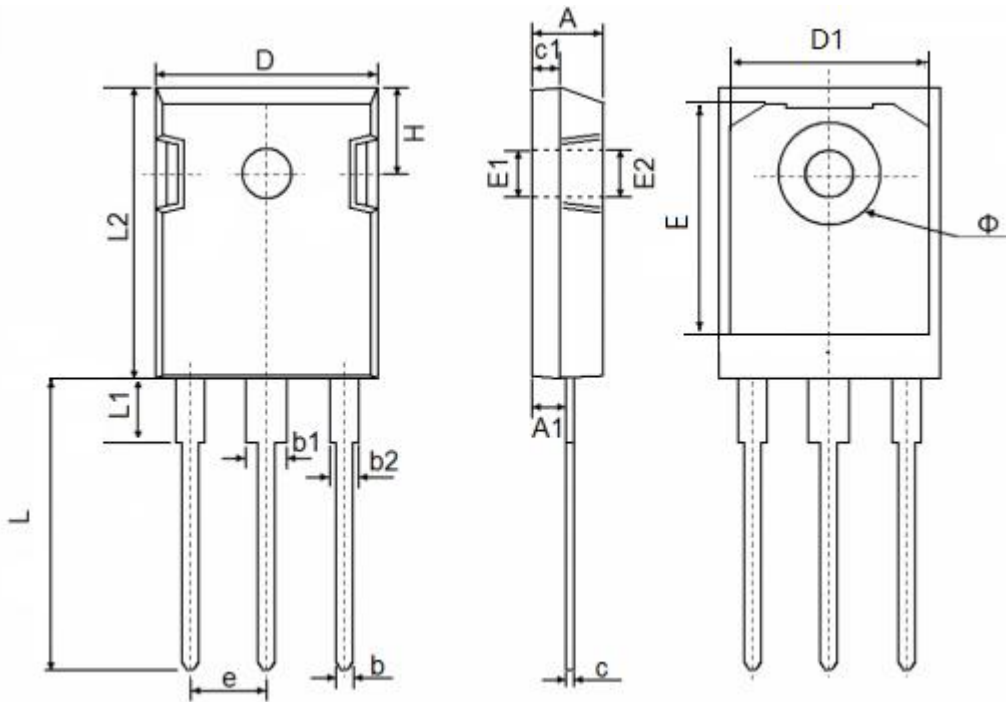


Figure 11 Normalized Maximum Transient Thermal Impedance

TO-247AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.800	5.250	0.189	0.207
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.400	0.110	0.134
b2	1.800	2.420	0.071	0.095
c	0.500	0.700	0.020	0.028
c1	1.900	2.200	0.075	0.087
D	15.700	16.200	0.618	0.638
D1	13.000	14.200	0.512	0.559
E	16.250	17.650	0.640	0.695
E1	3.650	5.500	0.144	0.220
E2	3.650	5.500	0.144	0.220
L	19.800	20.350	0.780	0.801
L1	4.000	4.500	0.157	0.177
L2	20.800	21.200	0.819	0.835
φ	7.180 BSC		0.283 BSC	
e	5.440 BSC		0.214 BSC	
H	5.300	6.300	0.209	0.248