

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	2.2m Ω @10V	235A

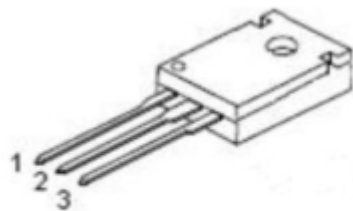
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

Application

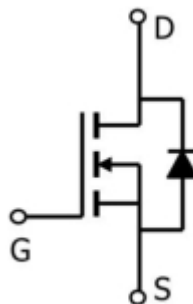
- PWM Application
- Hard switched and high frequency circuits
- Power Management

Package

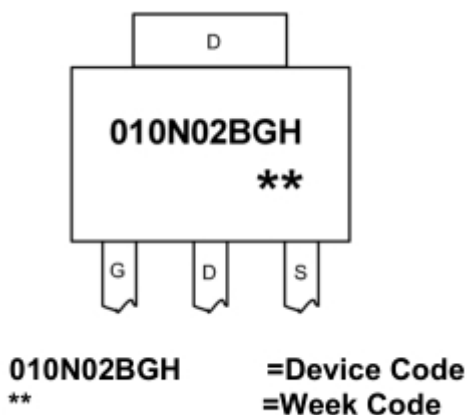


TO-247(1:G 2:D 3:S)

Circuit diagram



Marking



Absolute maximum ratings

(T_a=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 (T _C =25°C)	I _D	235	A
Pulsed Drain Current	I _{DM}	940	A
Single Pulse Avalanche Energy ¹	E _{AS}	1458	mJ
Total Power Dissipation(T _C =25°C)	P _D	400	W
Thermal Resistance Junction-Case ¹	R _{θJC}	0.31	°C/ W
Storage Temperature Range	T _{STG}	-55~ +150	°C
Operating Junction Temperature Range	T _J	-55~ +150	°C

Electrical characteristics

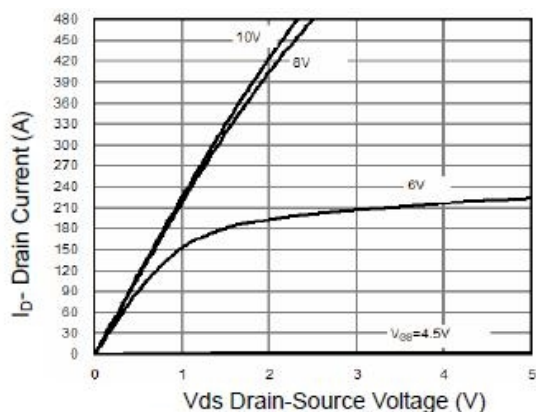
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	100			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =80V,V _{GS} = 0V , T _J =25℃			1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	uA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.7	3.5	4.3	V
Static Drain-Source on-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =125A		2.2	2.8	Ω
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V, f=1MHz		11531		pF
Output Capacitance	C _{Oss}			1489		
Reverse Transfer Capacitance	C _{rss}			72		
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} =50V, V _{GS} =10V, I _D =125A		158		nC
Gate-Source Charge	Q _{gS}			51		
Gate-Drain Charge	Q _{gd}			27		
Turn-On Delay Time	T _{d(on)}	V _{DD} =50V, V _{GS} =10V, R _G =1.6Ω, I _D =125A		25		nS
Rise Time	T _r			75		
Turn-Off Delay Time	T _{d(off)}			89		
Fall Time	T _f			29		
Diode Characteristics						
Diode Forward Voltage2	V _{SD}	V _{GS} =0V, I _S =1A, T _J =25℃			1.2	V

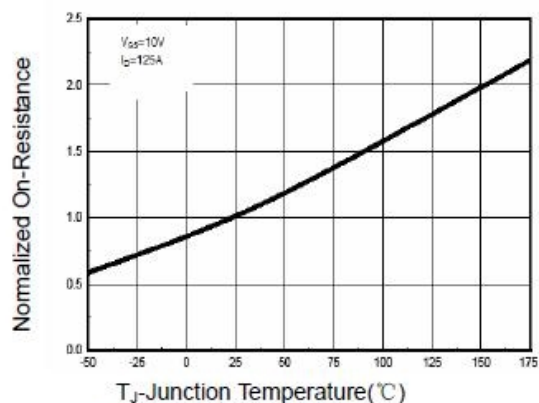
Notes:

1. The EAS data shows Max. rating . The test condition is $V_{DD} = 50V, V_{GS} = 10V, L = 0.5\text{mH}, R_G = 25\Omega$
2. The power dissipation is limited by 150°C junction temperature

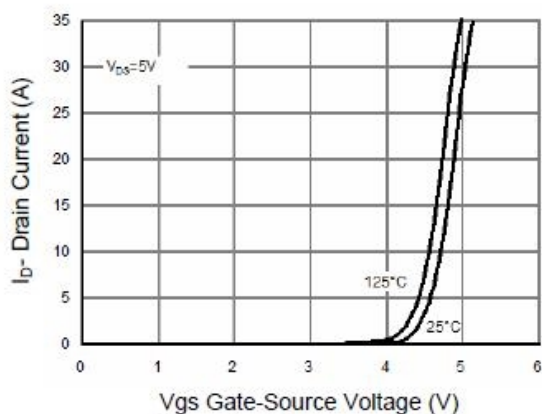
Typical Characteristics



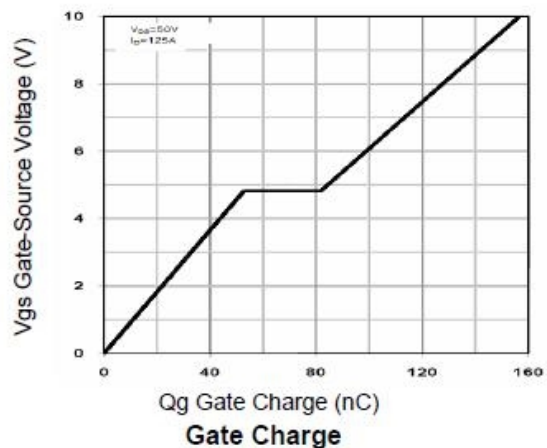
Output Characteristics



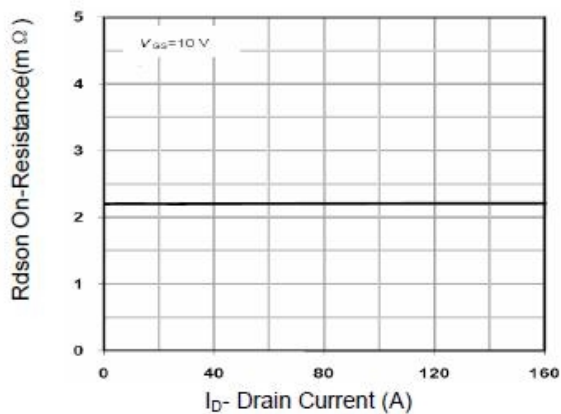
$R_{DS(on)}$ -Junction Temperature



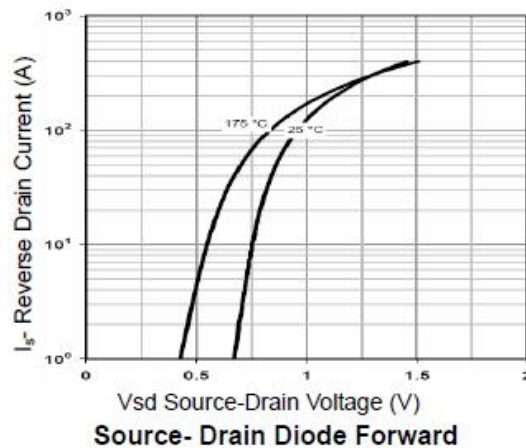
Transfer Characteristics



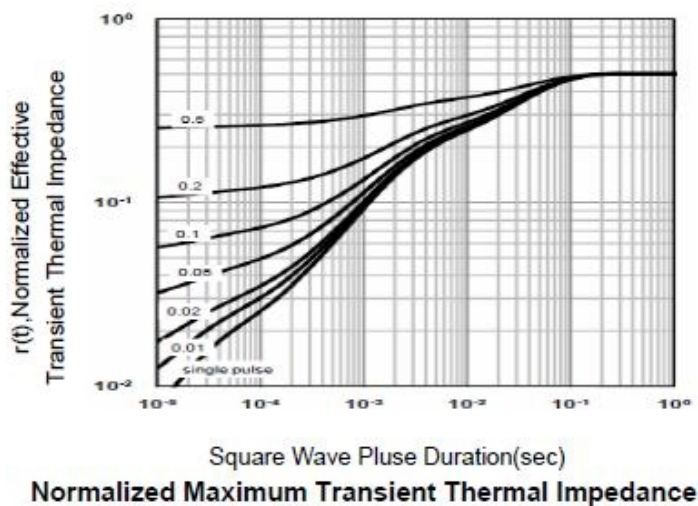
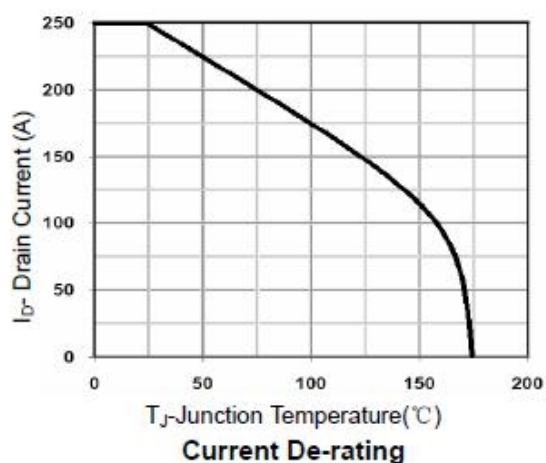
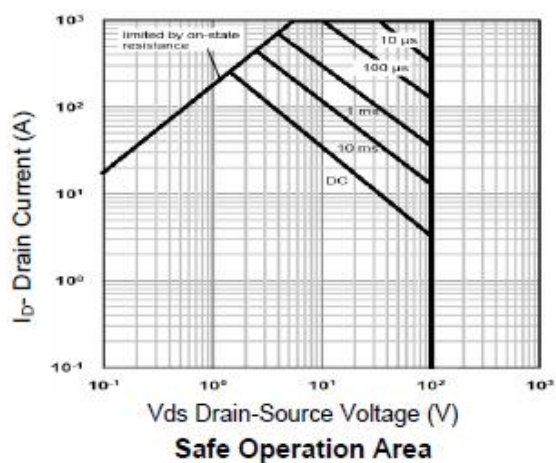
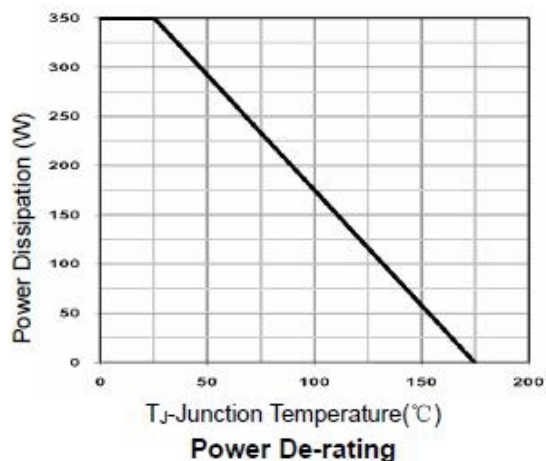
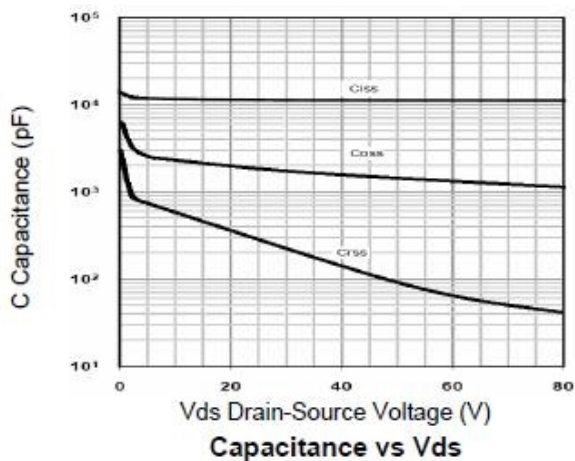
Gate Charge



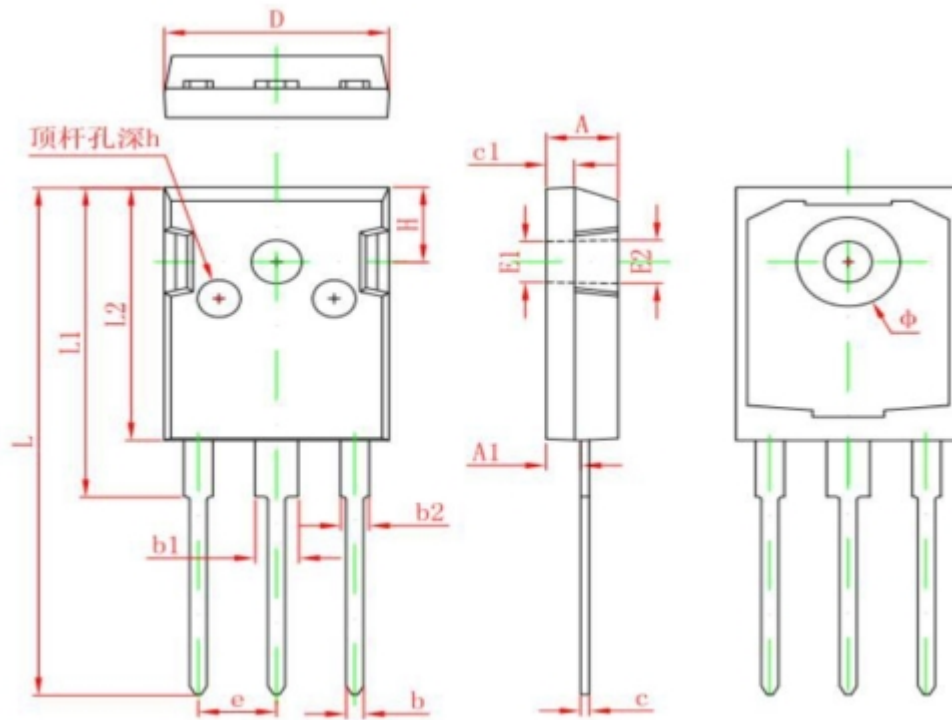
$R_{DS(on)}$ - Drain Current



Source- Drain Diode Forward



TO-247 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF.		0.138 REF.	
E2	3.600 REF.		0.142 REF.	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
e	7.100	7.300	0.280	0.287
e	5.450 TYP.		0.215 TYP.	
H	5.980 REF.		0.235 REF.	
h	0.000	0.300	0.000	0.012