

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	2mΩ@10V	235A

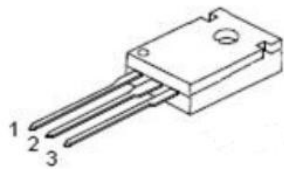
Feature

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

Applications

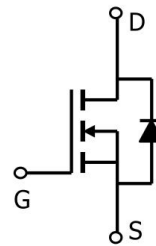
- PWM Application
- Hard switched and high frequency circuits
- Power Management

Package

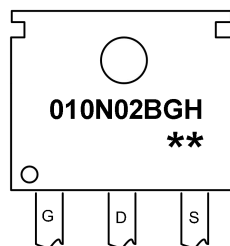


TO-247(1:G 2:D 3:S)

Circuit diagram



Marking



010N02BGH
**

=Device Code
=Week Code

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

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V _{DS}	100	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current (Tc=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 ² (Tc=25°C)	P _D	400	W
Thermal Resistance Junction-Case	R _{θJC}	0.31	°C/W
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	°C

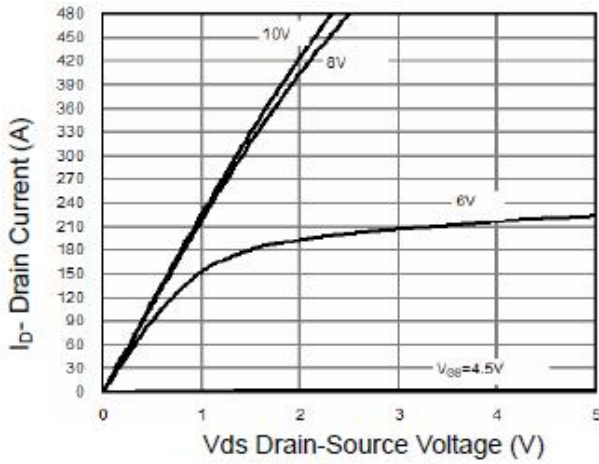
Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V , I _D =250uA	100	---	---	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =80V , V _{GS} =0V , T _J =25°C	---	---	1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250uA	2.7	3.2	4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V , I _D =125A	---	2	2.6	mΩ
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 (4.5V)	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 Voltage ²	V _{SD}	V _{GS} =0V , I _S =1A , T _J =25°C	---	---	1.2	V
Reverse recover time	T _{rr}	I _{SD} =180A, di/dt=100A/us, V _{DD} =80, T _J =25°C	---	86	---	ns
Reverse recovery charge	Q _{rr}		---	201	---	nC
Reverse recovery current	I _{RRM}		---	5	---	A

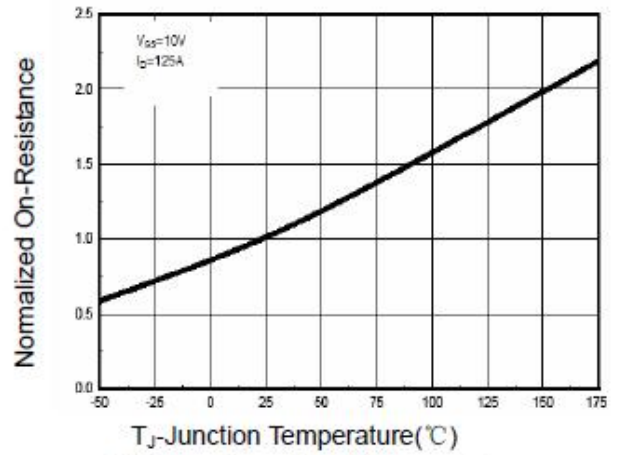
Note :

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

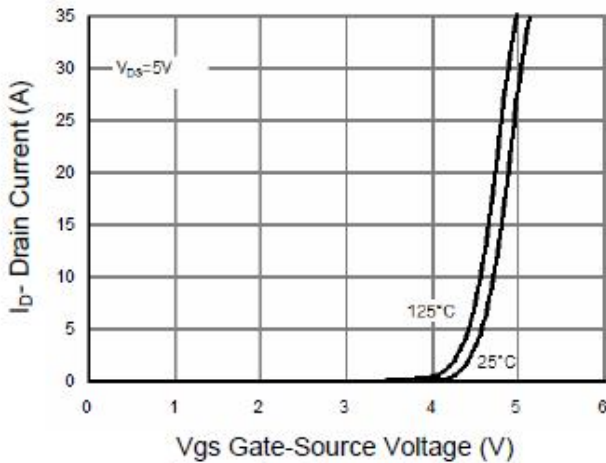
Typical Characteristics



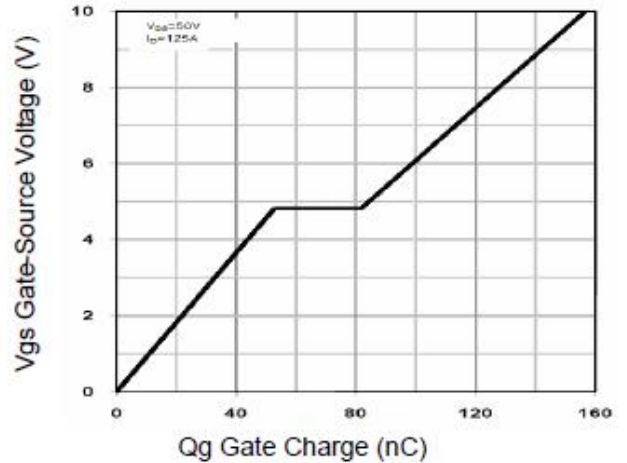
Output Characteristics



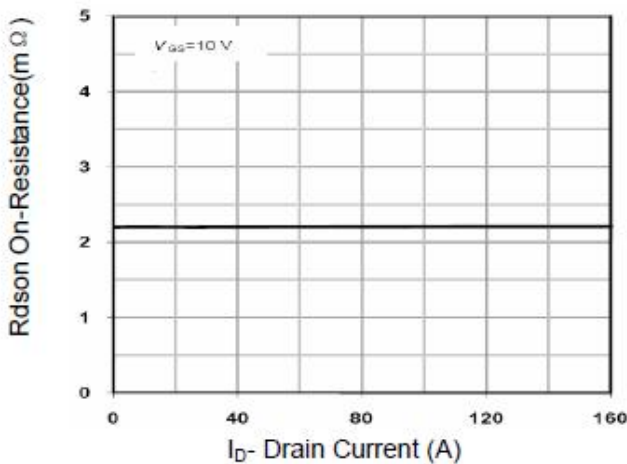
Rdson-Junction Temperature



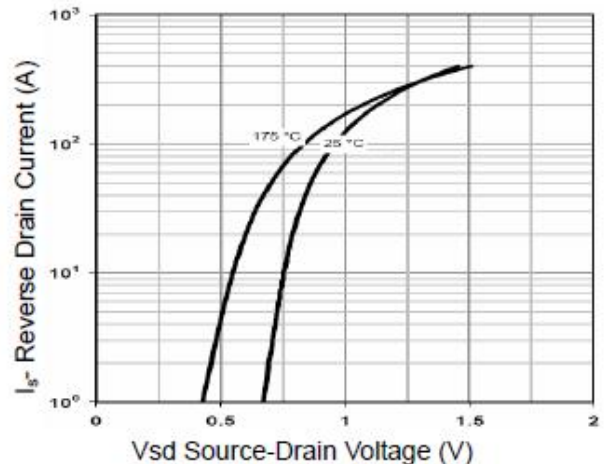
Transfer Characteristics



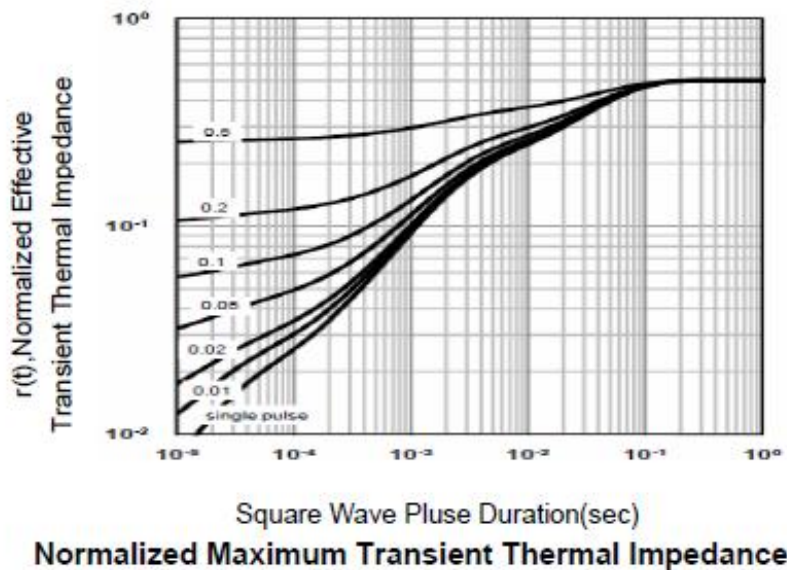
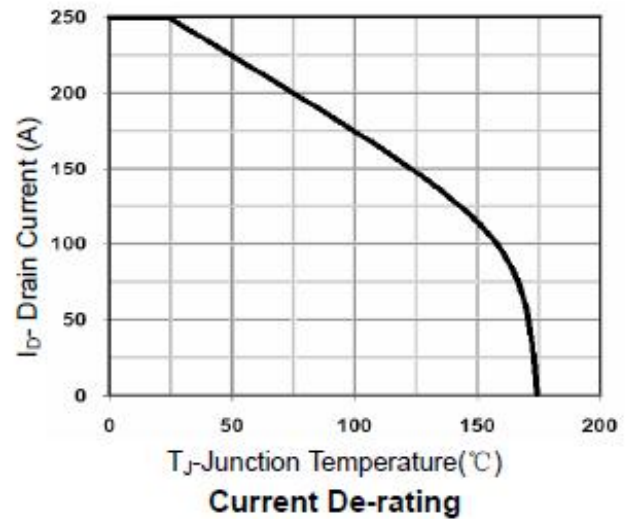
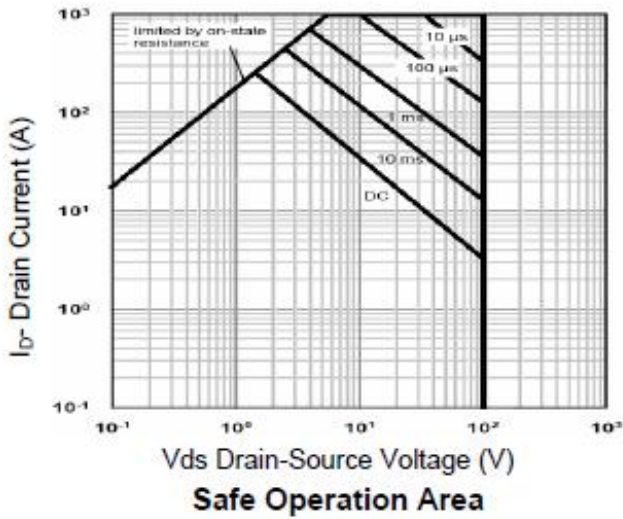
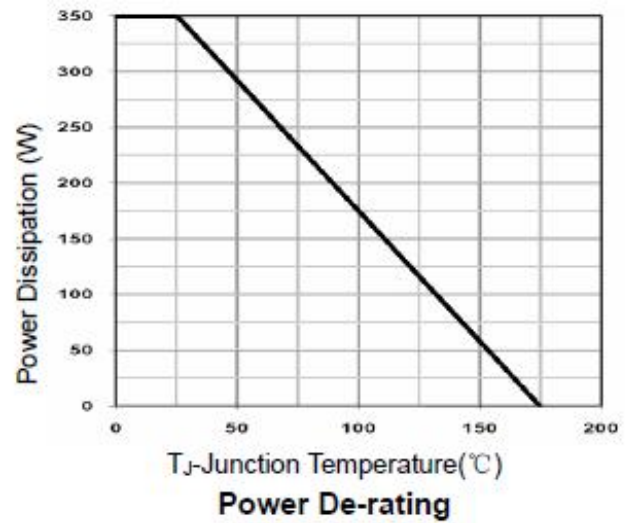
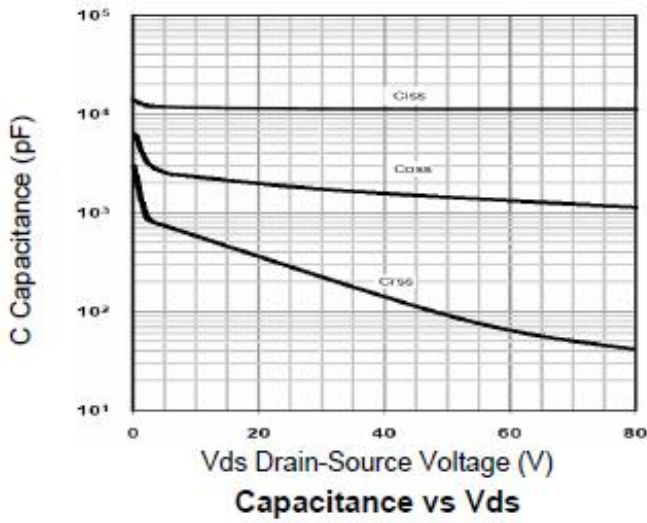
Gate Charge



Rdson- Drain Current



Source- Drain Diode Forward



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