

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100V	2.7mΩ@10V	220A

Feature

- Fast Switching
- Low Gate Charge and $R_{DS(on)}$
- Advanced Split Gate Trench Technology

Application

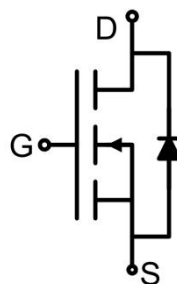
- PWM Application
- Hard switched and high frequency circuits
- Power Management

Package

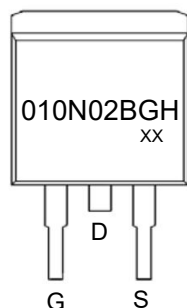


TO-263AB

Circuit diagram



Marking



Absolute maximum ratings (Ta=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 ($T_C=25^\circ\text{C}$)	I_D	220	A
Continuous Drain Current ($T_C=100^\circ\text{C}$)	$I_D (100^\circ\text{C})$	155	A
Pulsed Drain Current	I_{DM}	880	A
Power Dissipation ² ($T_C=25^\circ\text{C}$)	P_D	300	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.41	$^\circ\text{C/W}$
Single pulse avalanche energy ¹	E_{AS}	1458	mJ
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

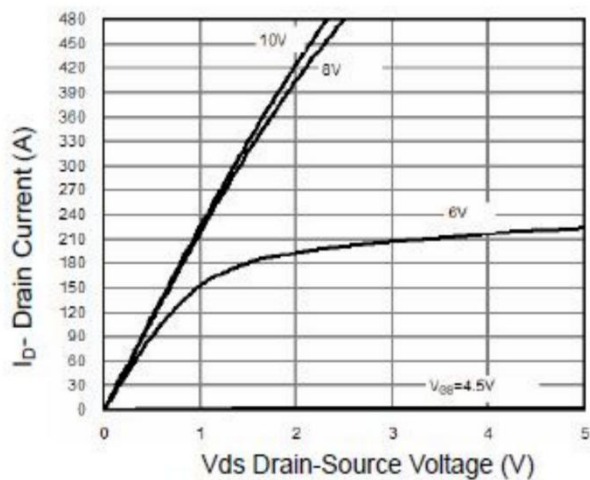
Electrical characteristics (Ta=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 80V, V _{GS} = 0V, T _J =25°C			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	2.7	3.2	4.3	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =125A		2.1	2.7	mΩ
Dynamic characteristics ³⁾						
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		
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, I _D =125A, R _G =1.6Ω		25		nS
Turn-on rise time	t _r			75		
Turn-off delay time	t _{d(off)}			89		
Turn-off fall time	t _f			29		
Source-Drain Diode characteristics						
Diode Forward voltage	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} =80V, T _J =25°C		86		ns
Reverse recovery charge	Q _{rr}			201		nC
Reverse recovery current	I _{RRM}			5		A

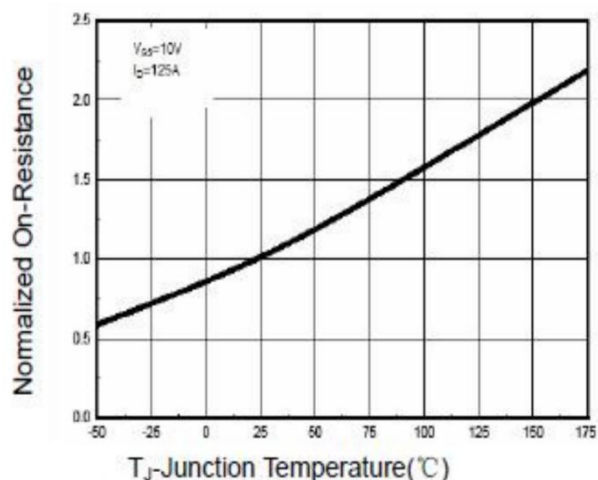
Notes:

- 1) The EAS data shows Max. rating . The test condition is $V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_G = 25\Omega$.
- 2) The power dissipation is limited by 150°C junction temperature.
- 3) Guaranteed by design, not subject to production.

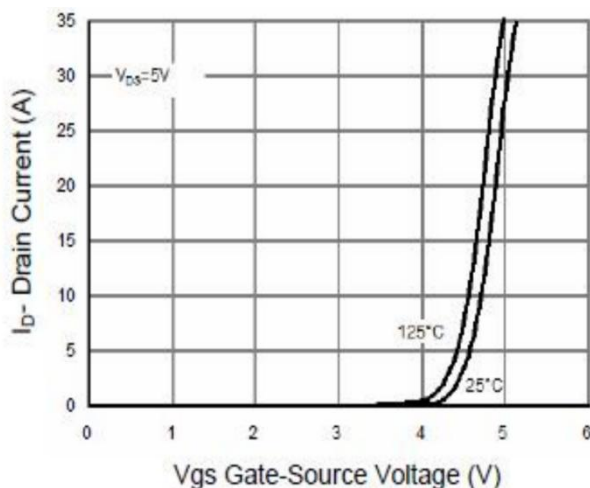
Typical Characteristics



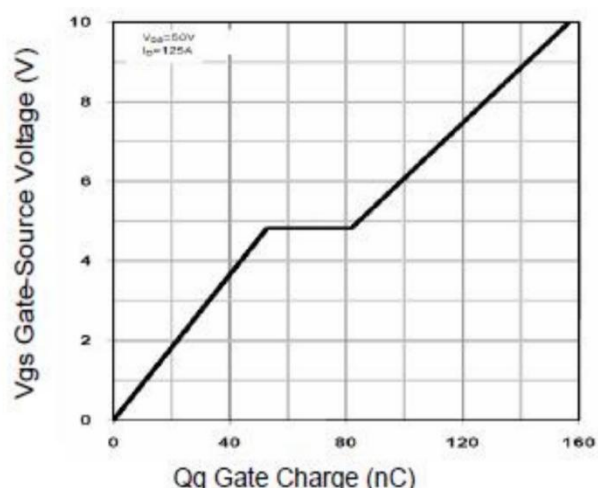
Output Characteristics



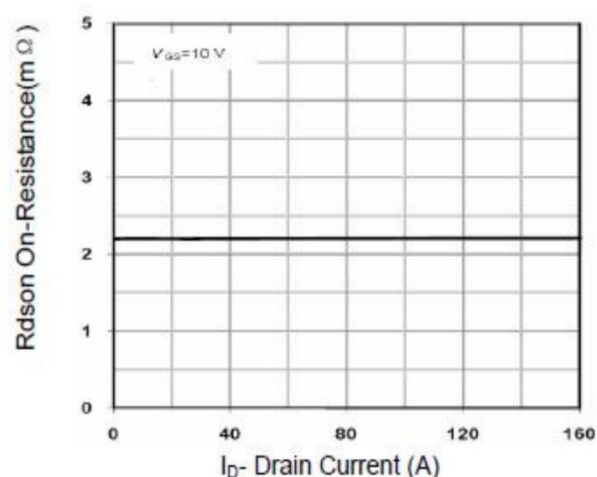
$R_{DS(on)}$ -Junction Temperature



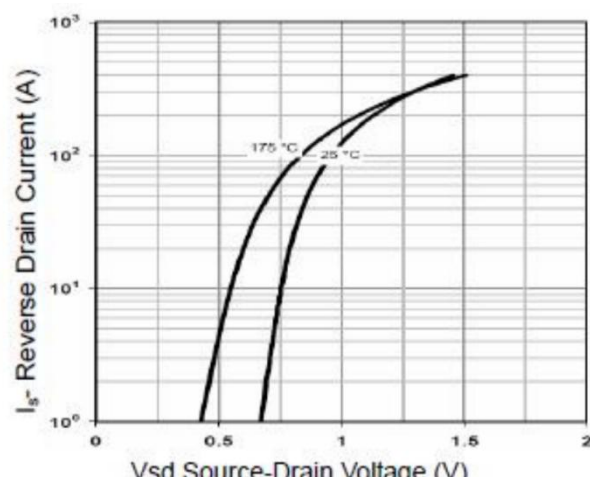
Transfer Characteristics



Gate Charge

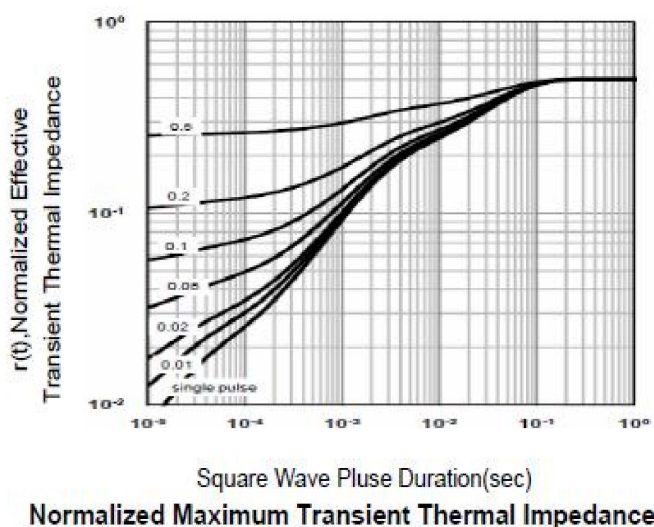
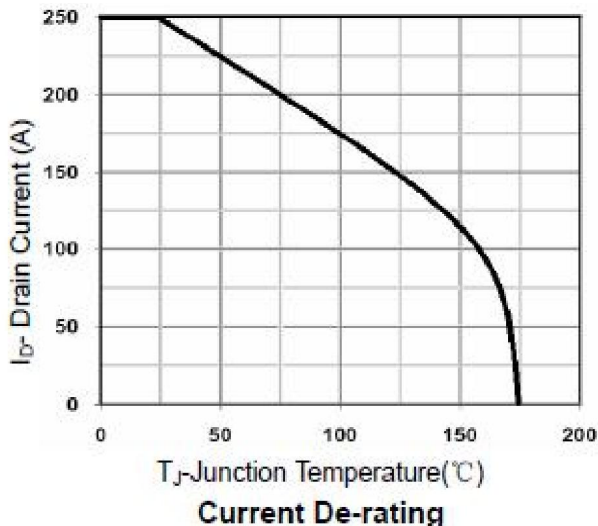
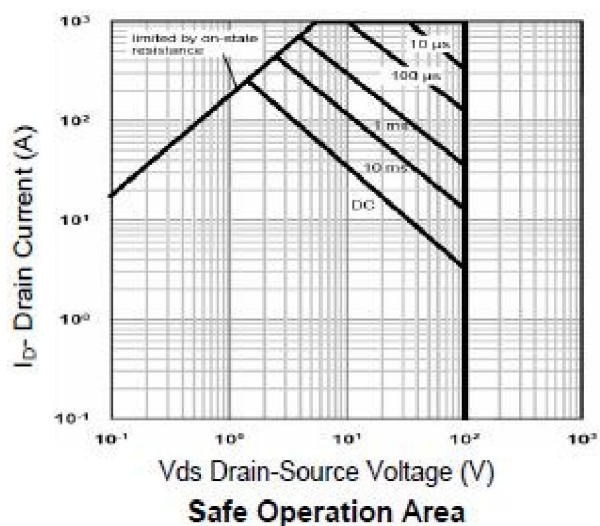
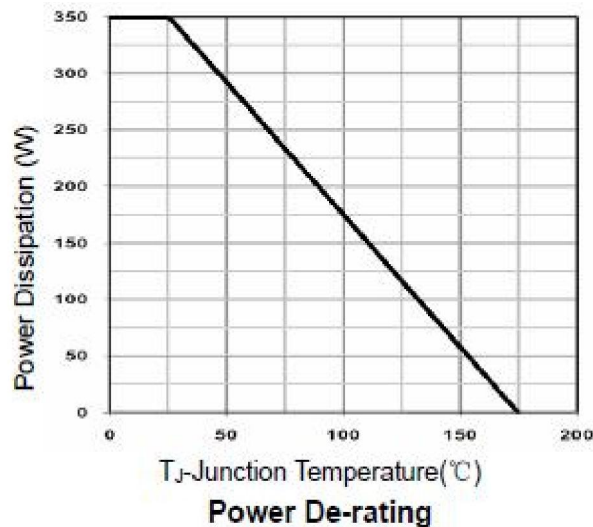
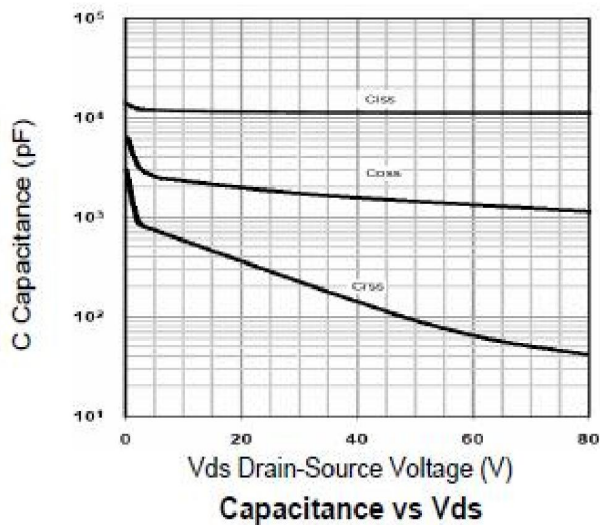


$R_{DS(on)}$ - Drain Current

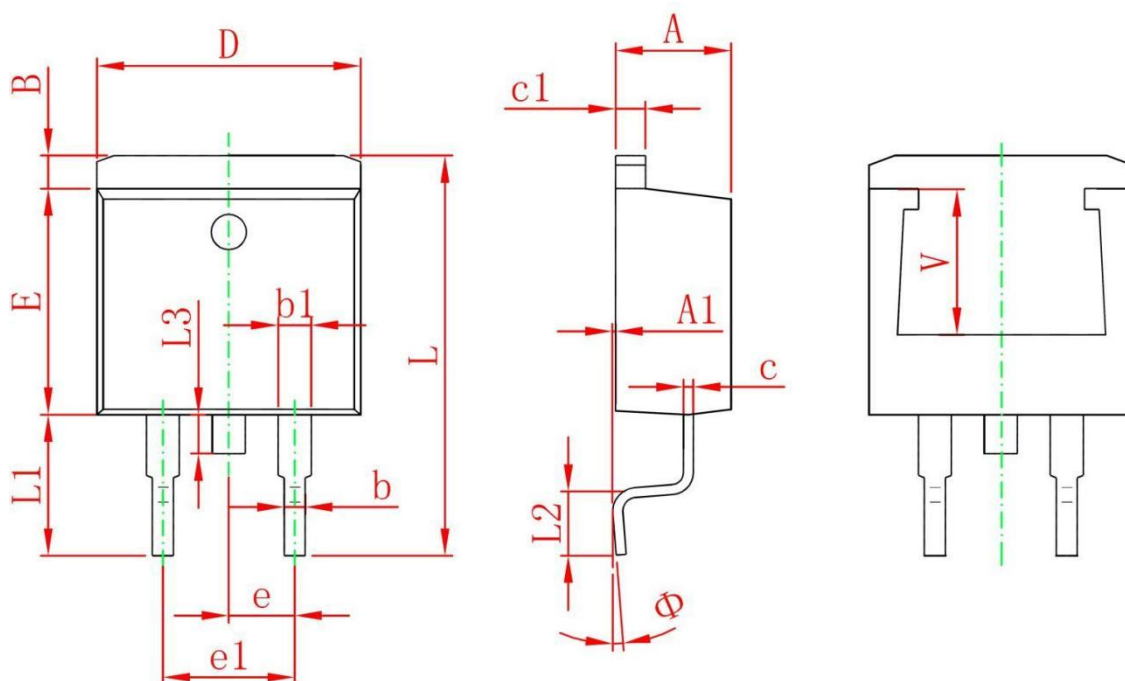


Source- Drain Diode Forward

Typical Characteristics



TO-263AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
θ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	