

Product Summary

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

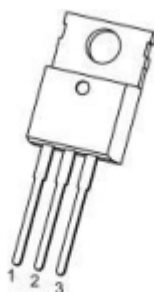
Feature

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

Application

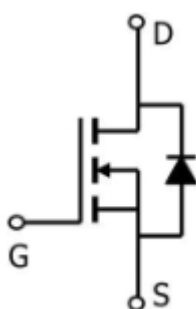
- PWM Application
- Hard switched and high frequency circuits Power Management

Package

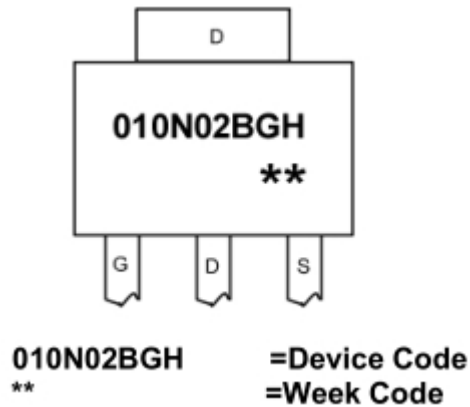


TO-220-3L-C(1:G 2:D 3:S)

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	220	A
Pulsed Drain Current	I _{DM}	880	A
Single Pulse Avalanche Energy ¹	E _{AS}	1458	mJ
Total Power Dissipation(T _C =25°C)	P _D	300	W
Thermal Resistance Junction-Case ¹	R _{θJC}	0.41	°C/ W
Storage Temperature Range	T _{STG}	-55~ +150	°C
Operating Junction Temperature Range	T _J	-55~ +150	°C

Electrical characteristics

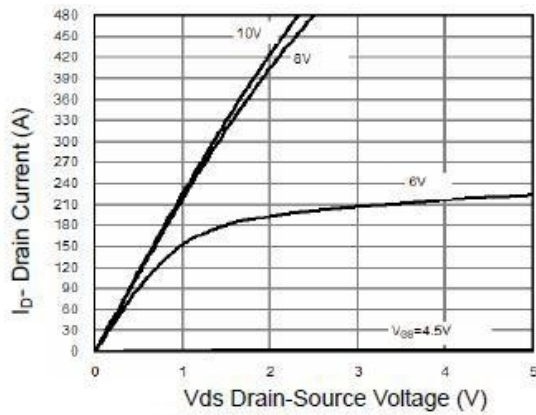
(T_A=25°C, unless otherwise noted)

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°C			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	3	4	V
Static Drain-Source on-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =125A		2.7	3.5	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°C			1.2	V

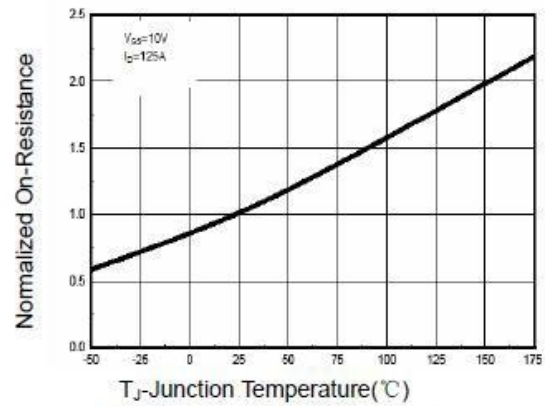
Notes:

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

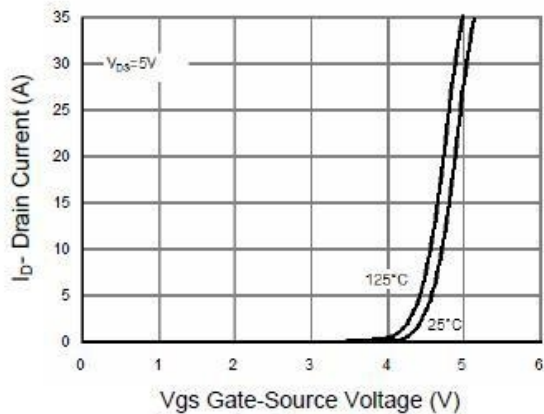
Typical Characteristics



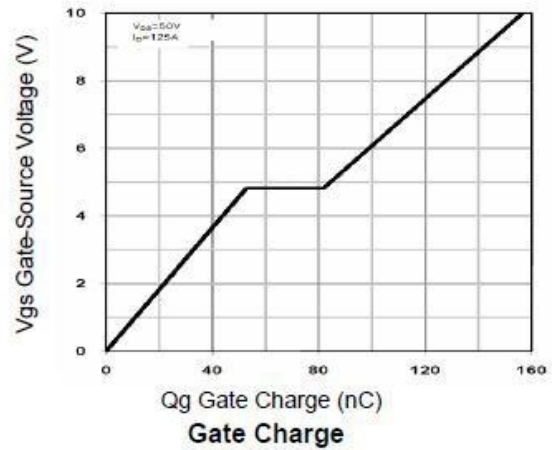
Output Characteristics



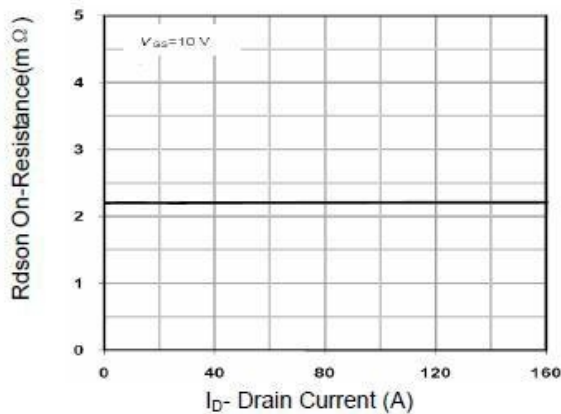
$R_{DS(on)}$ -Junction Temperature



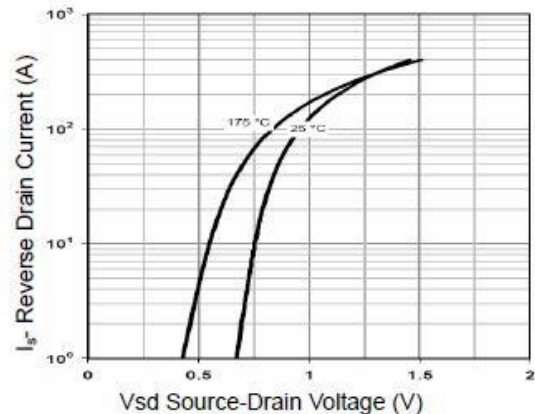
Transfer Characteristics



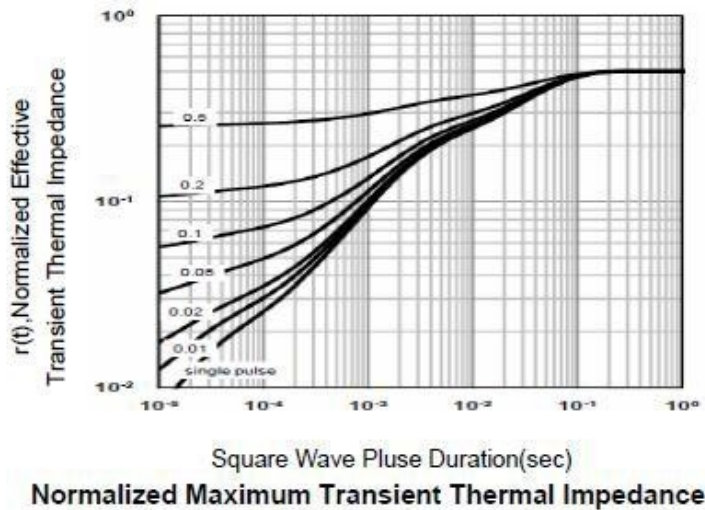
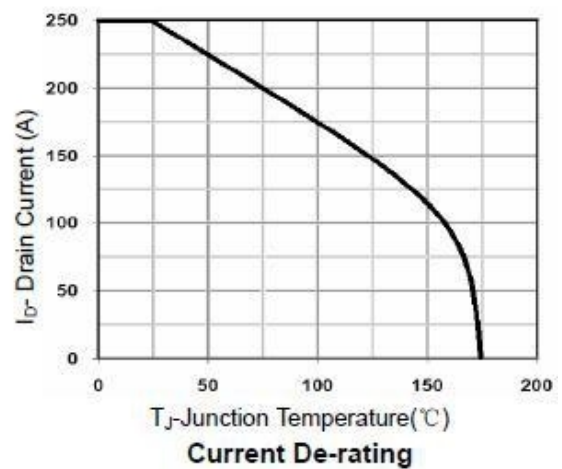
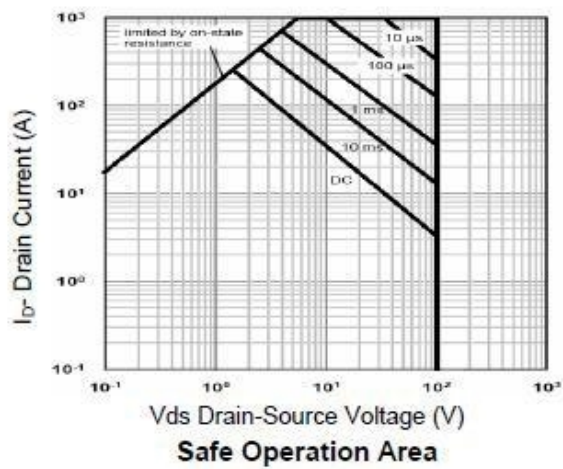
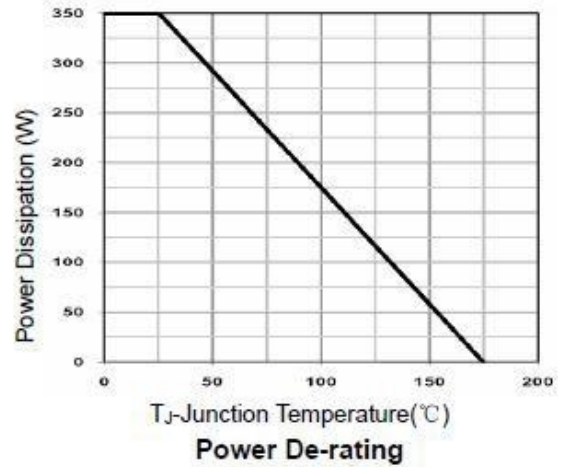
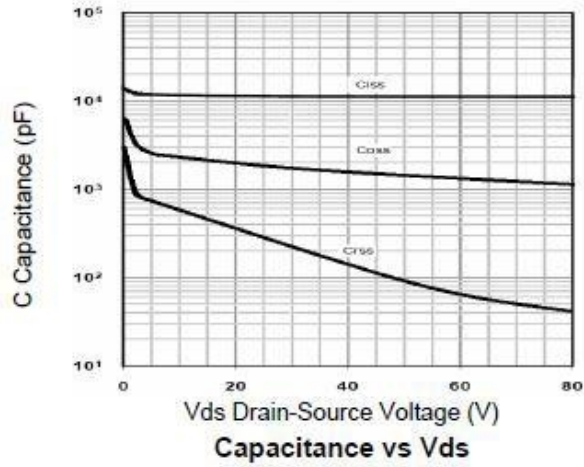
Gate Charge



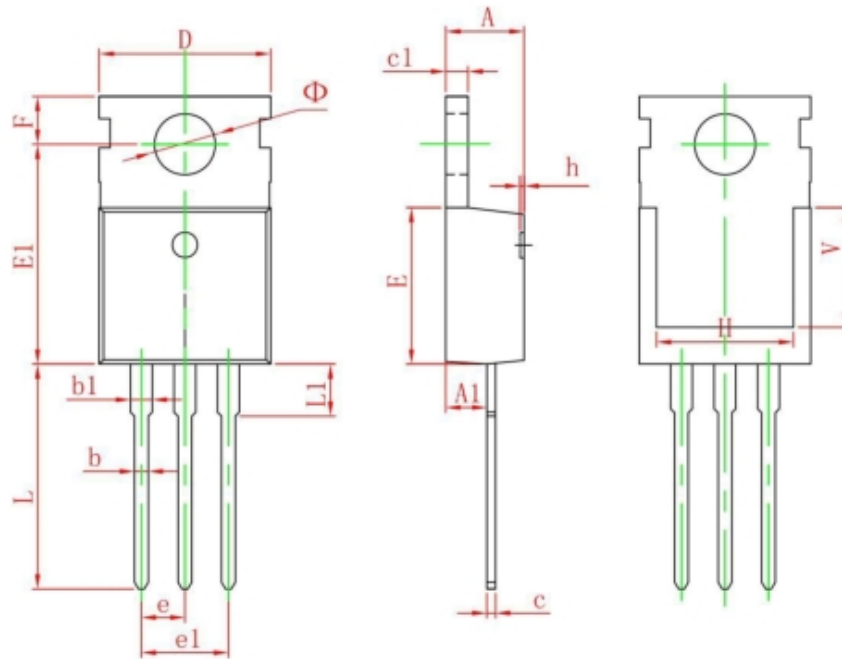
$R_{DS(on)}$ - Drain Current



Source- Drain Diode Forward



TO-220-3L-C Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.400	4.600	0.173	0.181
A1	2.250	2.550	0.089	0.100
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.330	0.650	0.013	0.026
c1	1.200	1.400	0.047	0.055
D	9.910	10.250	0.390	0.404
E	8.950	9.750	0.352	0.384
E1	12.650	13.050	0.498	0.514
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
F	2.650	2.950	0.104	0.116
H	7.900	8.100	0.311	0.319
h	0.000	0.300	0.000	0.012
L	12.900	13.400	0.508	0.528
L1	2.850	3.250	0.112	0.128
V	6.900 REF.		0.276 REF.	
Φ	3.400	3.800	0.134	0.150