

Product Summary

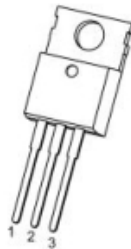
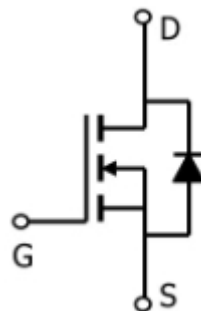
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
150V	3.7m Ω @10V	220A

Feature

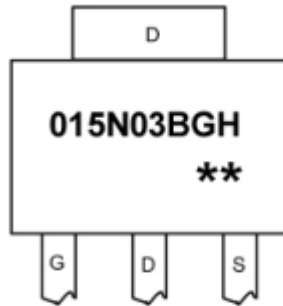
- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

Applications

- Power switching application
- DC-DC Converter
- Power Management

Package**TO-220-3L-C(G:1 D:2 S:3)****Circuit diagram**

Marking



015N03BGH : Product code
****** : Week code

Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	150	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous drain current (T _C = 25°C)	I _D	220	W
Pulsed Drain Current	I _{DM}	880	A
Power Dissipation (T _C = 25°C)	P _D	248	W
Single Pulse Avalanche Energy ¹	E _{AS}	1783	mJ
Thermal Resistance Junction- Case ¹	R _{θJC}	0.5	°C/ W
Operation and storage temperature	T _{STG} , T _J	-55~ +150	°C

Electrical characteristics

(T_A=25°C, unless otherwise noted)

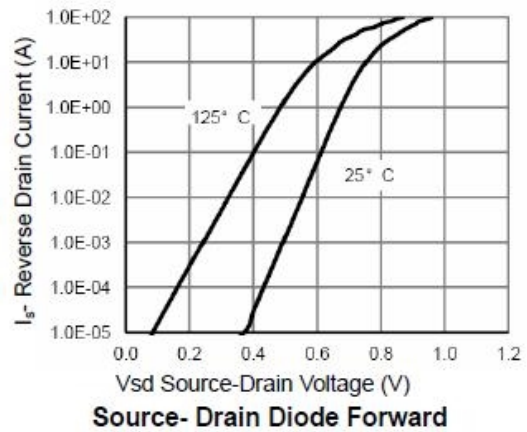
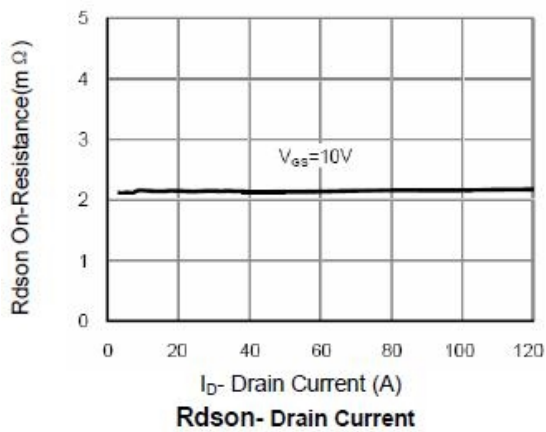
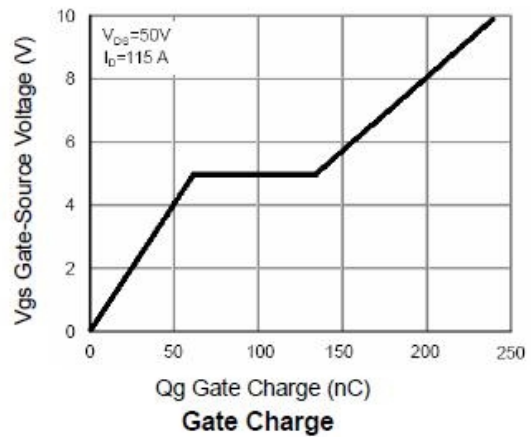
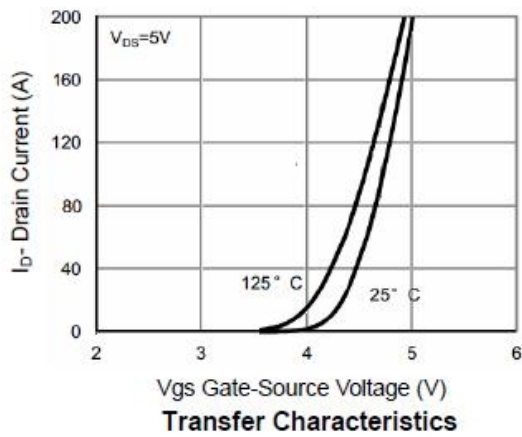
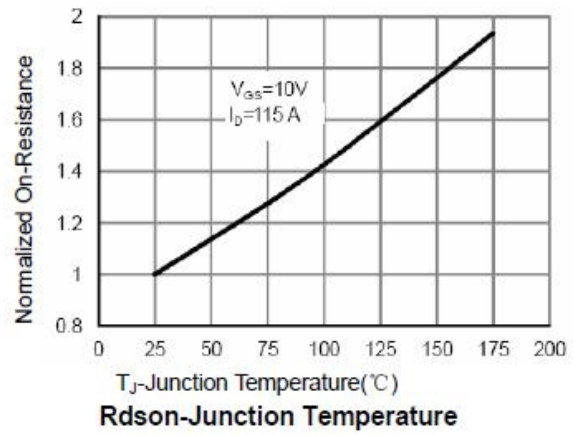
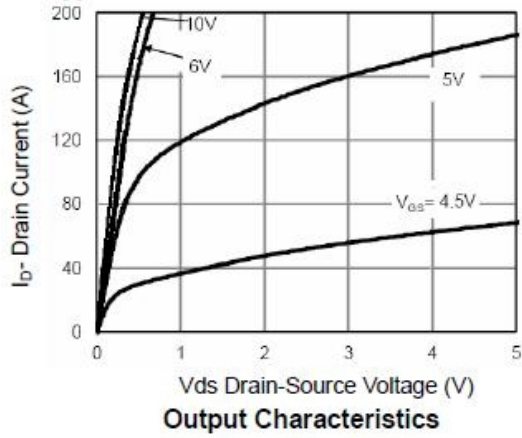
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	150			V
Drain Cut-Off Current	I _{DSS}	V _{DS} =120V,V _{GS} = 0V			1	uA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V , V _{DS} =0V			±0.1	uA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.5	3	3.5	V
Drain-Source ON Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A		3.7	4.7	Ω
Dynamic characteristics ⁴						
Input Capacitance	C _{iss}	V _{DS} =75V,V _{GS} =0V, f=1MHz		10560		pF
Output Capacitance	C _{oss}			1306		
Reverse Transfer Capacitance	C _{rss}			48		
Switching Characteristics						
Total Gate Charge(4.5V)	Q _g	V _{DS} =75V, V _{GS} =10V, I _D =70A		160		nC
Gate-Source Charge	Q _{gs}			66		
Gate-Drain Charge	Q _{gd}			42		
Turn-On Delay Time	T _{d(on)}	V _{GS} =10V, V _{DS} =75V, R _L =3Ω, R _G =4.7Ω		34		nS
Rise Time	T _r			27		
Turn-Off Delay Time	T _{d(off)}			78		
Fall Time	T _f			30		
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V _{SD}	I _S = 1A, V _{GS} = 0V			1.2	V

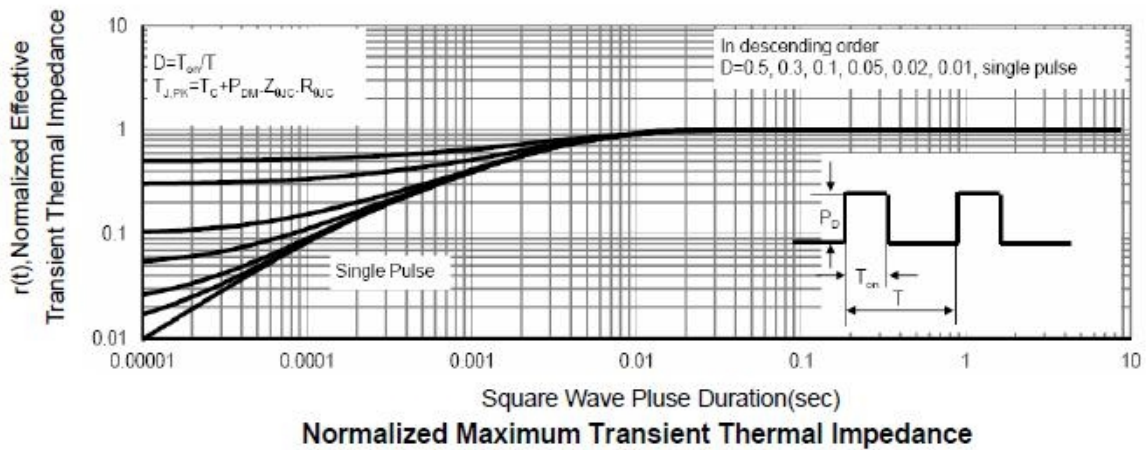
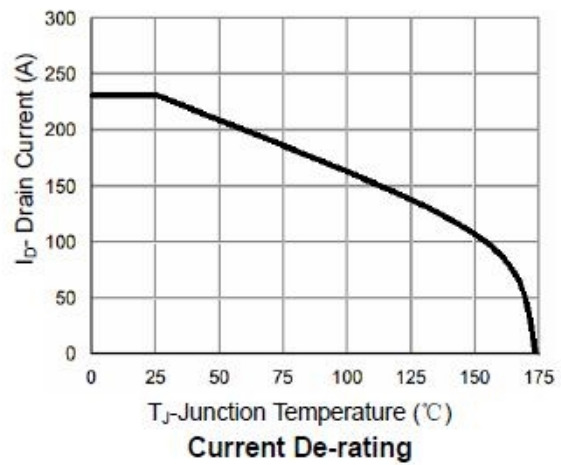
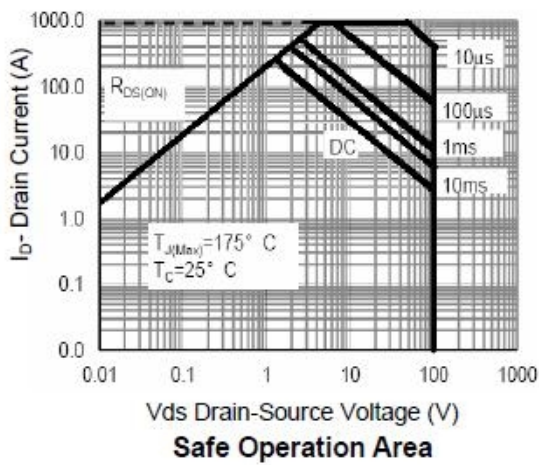
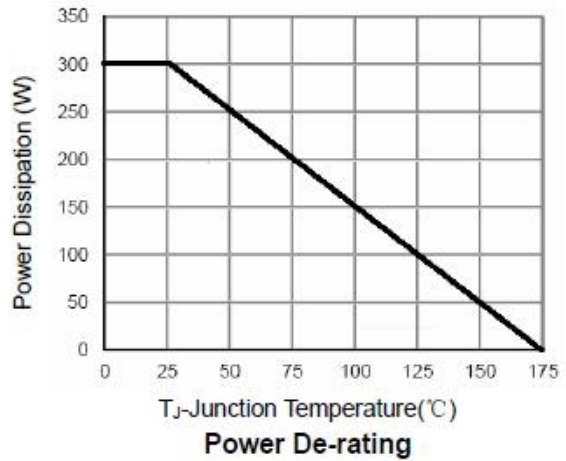
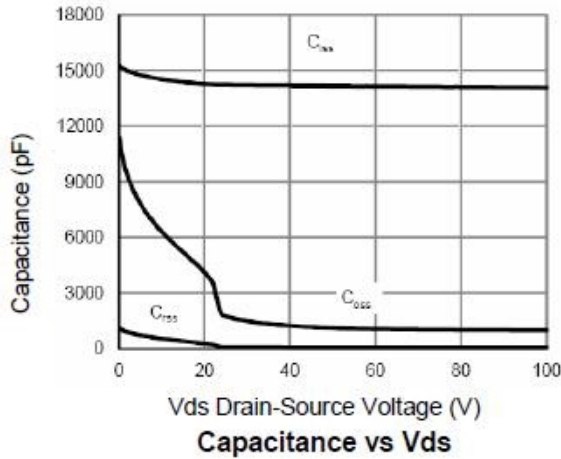
Note :

1. E_{AS} is tested at starting T_j = 25°C, V_{DD} =75V, V_{GS} = 10V, L = 0.5mH, R_G=25Ω ;

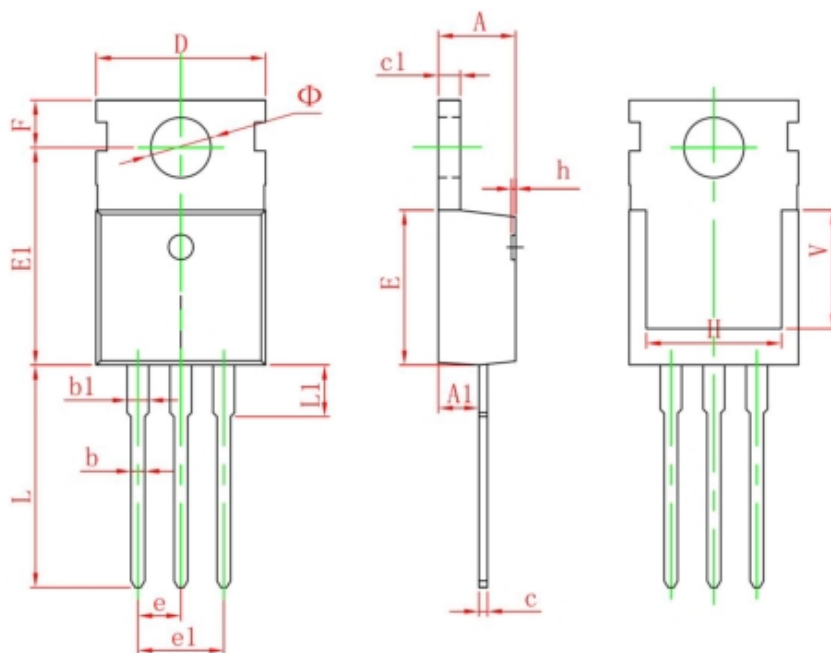
Typical Characteristics

Typical Electrical and Thermal Characteristics





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