

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
100V	2.4mΩ@10V	220A

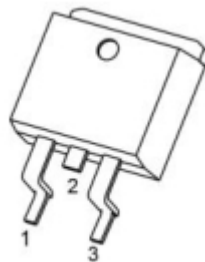
## Feature

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

## Application

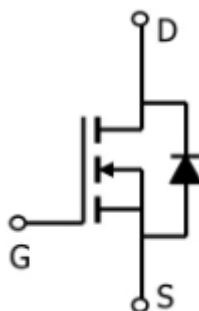
- Power switching application
- DC-DC Converter
- Power Management

## Package

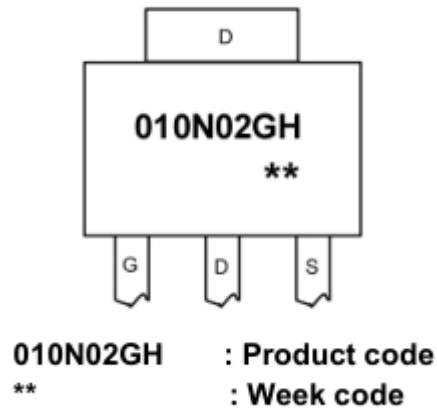


TO-263(1:G 2:D 3:S)

## Circuit diagram



## Marking



## Absolute maximum ratings

(T<sub>a</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	100	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current <sup>1</sup> (T <sub>C</sub> =25°C)	I <sub>D</sub>	220	A
Pulsed Drain Current <sup>2</sup>	I <sub>DM</sub>	880	A
Total Power Dissipation(T <sub>C</sub> =25°C)	P <sub>D</sub>	250	W
Single Pulse Avalanche Energy <sup>3</sup>	E <sub>AS</sub>	550	mJ
Thermal Resistance Junction-Case <sup>1</sup>	R <sub>θJC</sub>	0.5	°C/ W
Operation and storage temperature	T <sub>stg</sub> , T <sub>J</sub>	-55~ +150	°C

## Electrical characteristics

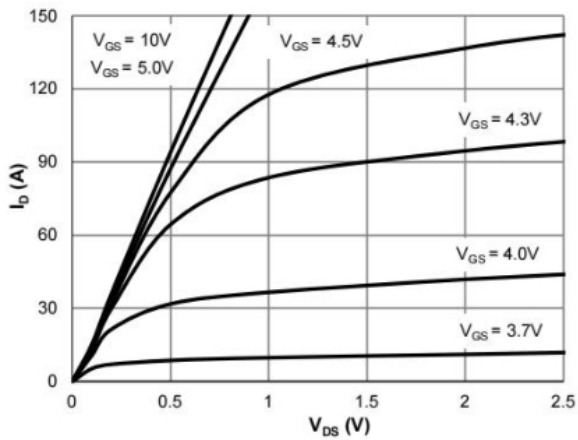
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Drain Cut-Off Current	$I_{DSS}$	$V_{DS} = 80V, V_{GS} = 0V$			1	$\mu A$
Gate Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 0.1$	$\mu A$
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.7	3.5	4.3	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		2.4	3	$\Omega$
Dynamic characteristics						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V,$ $f=1MHz$		9625		pF
Output Capacitance	$C_{oss}$			1608		
Reverse Transfer Capacitance	$C_{rss}$			75		
Switching Characteristics						
Total Gate Charge	$Q_g$	$V_{DS}=50V, V_{GS}=10V,$ $I_D=20A$		160		nC
Gate-Source Charge	$Q_{gs}$			31		
Gate-Drain Charge	$Q_{gd}$			37		
Turn-On Delay Time	$T_{d(on)}$	$V_{GS}=10V, V_{DS}=50V,$ $R_L=2.5\Omega, R_G=6.0\Omega$		35		nS
Rise Time	$T_r$			68		
Turn-Off Delay Time	$T_{d(off)}$			150		
Fall Time	$T_f$			105		
Diode Characteristics						
Source-Drain Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=1A$			1.2	V

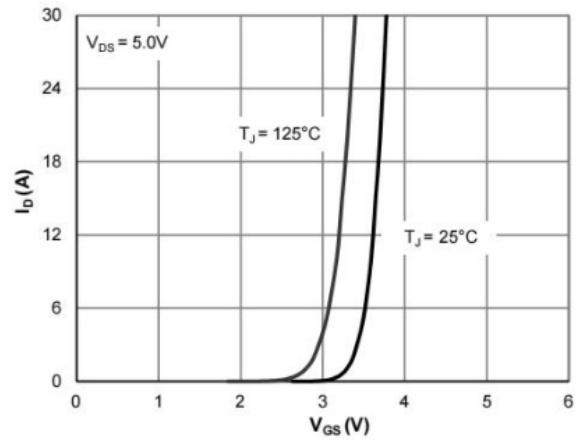
### Notes:

1. E AS is tested at starting  $T_j = 25^{\circ}\text{C}$ ,  $V_{DD} = 50V, V_{GS} = 10V, L = 0.1\text{mH}, R_g = 25\text{ m}\Omega$ ;

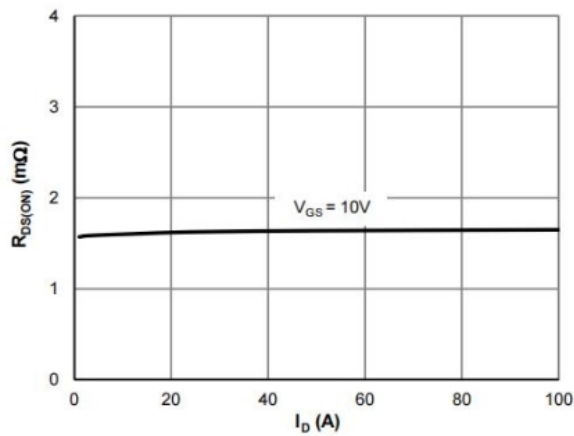
## Typical Characteristics



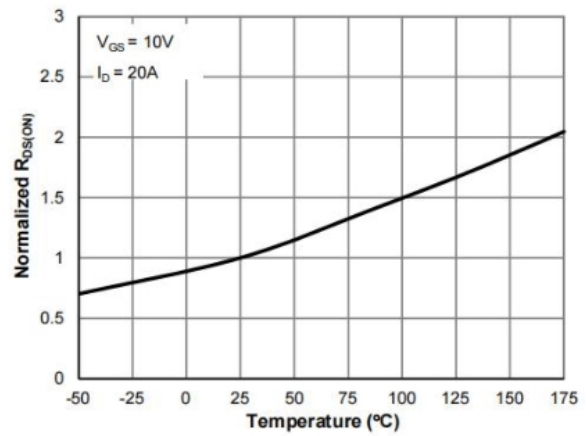
Typical Output Characteristics



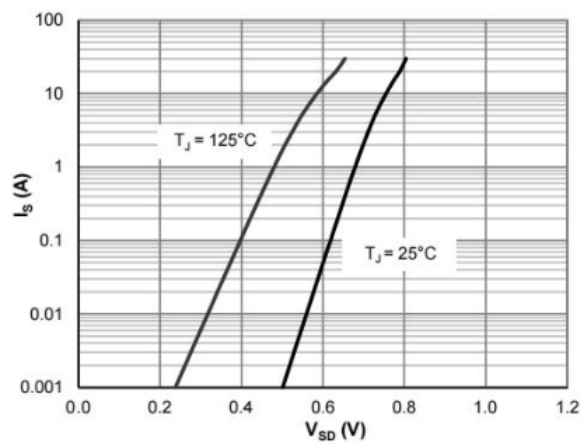
Transfer Characteristics



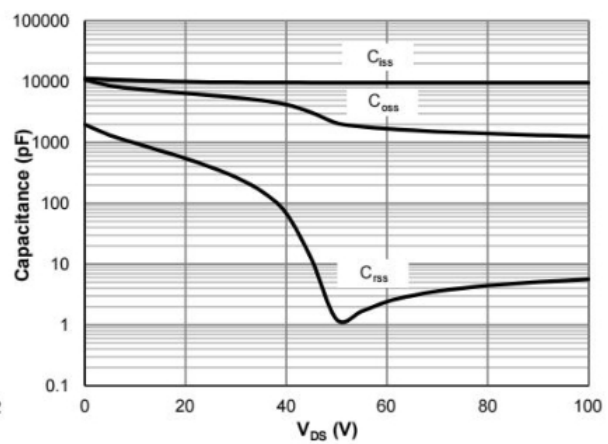
On-Resistance vs. Drain Current



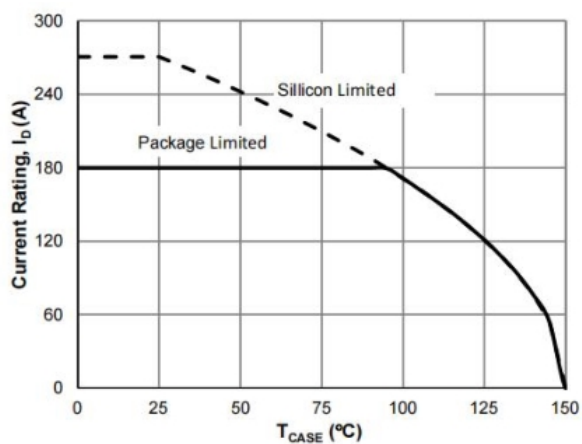
On-Resistance vs. Junction Temperature



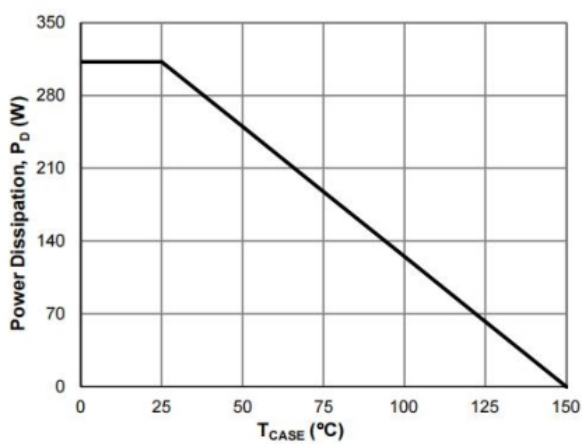
Body-Diode Characteristics



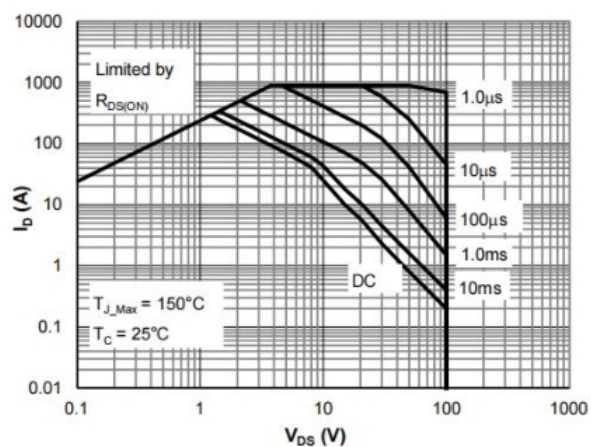
Capacitance Characteristics



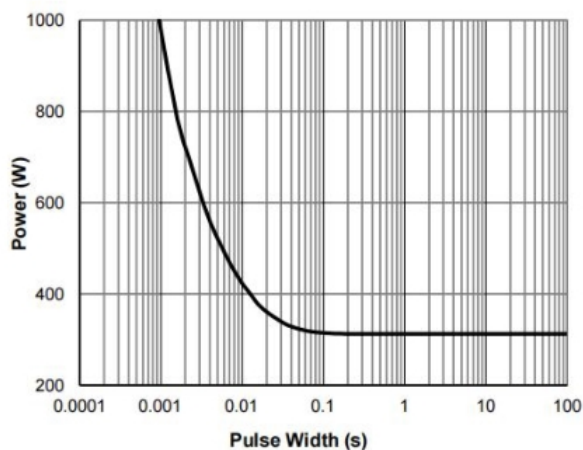
Current De-rating



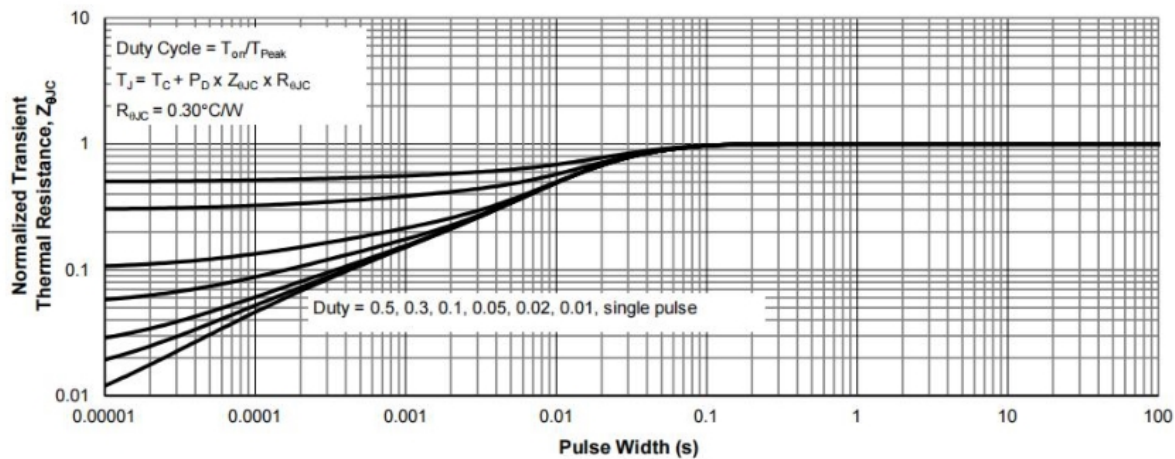
Power De-rating



Maximum Safe Operating Area

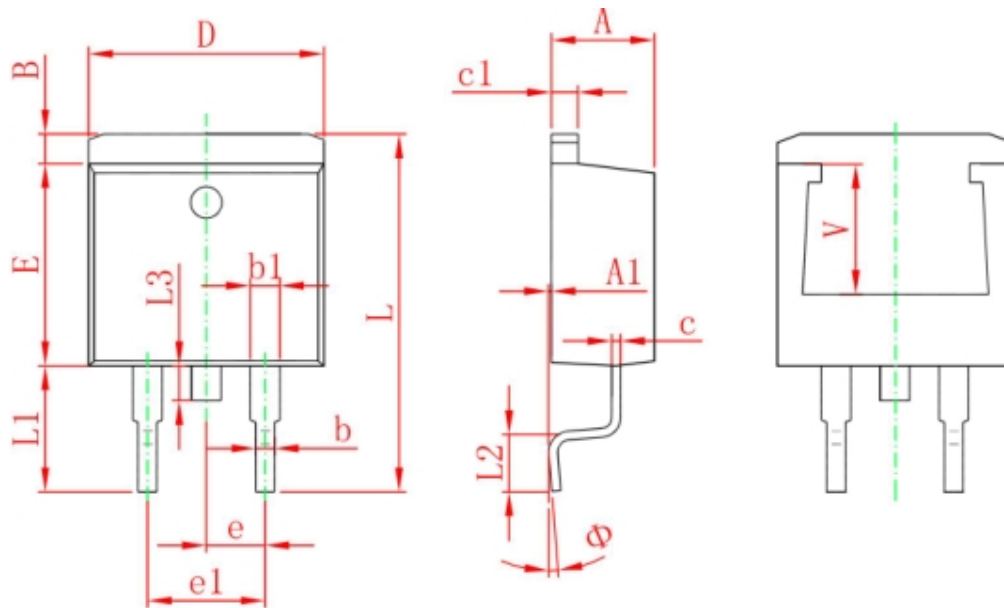


Single Pulse Power Rating, Junction-to-Case



Normalized Maximum Transient Thermal Impedance

## TO-263 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
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	