

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
150V	9mΩ@10V	90A

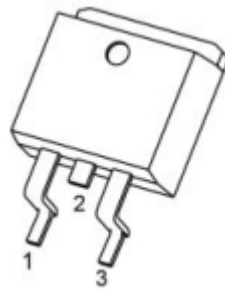
Feature

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

Applications

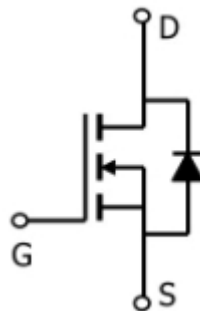
- Power switching application
- DC-DC Converter
- Power Management

Package

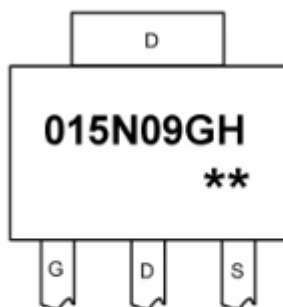


TO-263(1:G 2:D 3:S)

Circuit diagram



Marking



015N09GH : 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	90	W
Pulsed Drain Current	I _{DM}	360	A
Power Dissipation (T _C = 25°C)	P _D	190	W
Single Pulse Avalanche Energy ¹	E _{AS}	961	mJ
Thermal Resistance Junction- Case	R _{θJC}	0.65	°C/ W
Operation and storage temperature	T _{STG} , T _J	-55~ +150	°C

Electrical characteristics

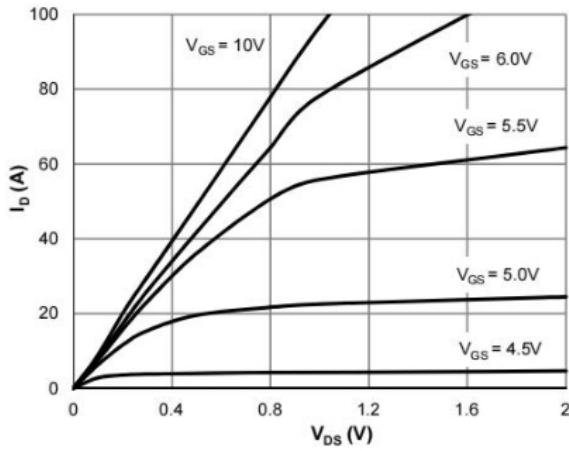
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	150			V
Drain Cut-Off Current	I_{DSS}	$V_{DS} = 120V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 0.1	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3	4	V
Drain-Source ON Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		9	12	Ω
Dynamic characteristics ⁴						
Input Capacitance	C_{iss}	$V_{DS} = 75V, V_{GS} = 0V,$ $f = 1MHz$		3200		pF
Output Capacitance	C_{oss}			363		
Reverse Transfer Capacitance	C_{rss}			9		
Switching Characteristics						
Total Gate Charge(4.5V)	Q_g	$V_{DS} = 75V, V_{GS} = 10V,$ $I_D = 20A$		30		nC
Gate-Source Charge	Q_{gS}			7.8		
Gate-Drain Charge	Q_{gd}			6.5		
Turn-On Delay Time	$T_{d(on)}$	$V_{GS} = 10V, V_{DS} = 75V,$ $R_L = 3.5\Omega, R_G = 6\Omega$		13		nS
Rise Time	T_r			25		
Turn-Off Delay Time	$T_{d(off)}$			31		
Fall Time	T_f			25		
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	$I_S = 1A, V_{GS} = 0V$			1.2	V

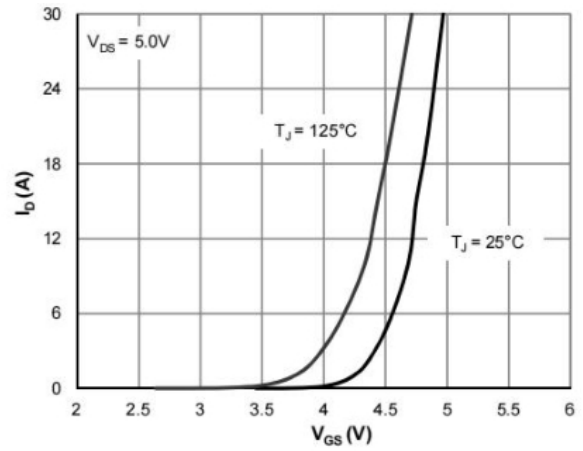
Note :

1. E_{AS} is tested at starting $T_j = 25^{\circ}\text{C}$, $V_{DD} = 75V, V_{GS} = 10V, L = 0.5\text{mH}, R_g = 25\Omega$;

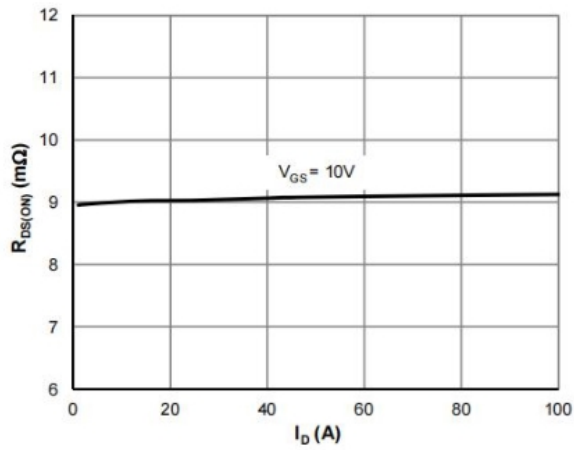
Typical Characteristics



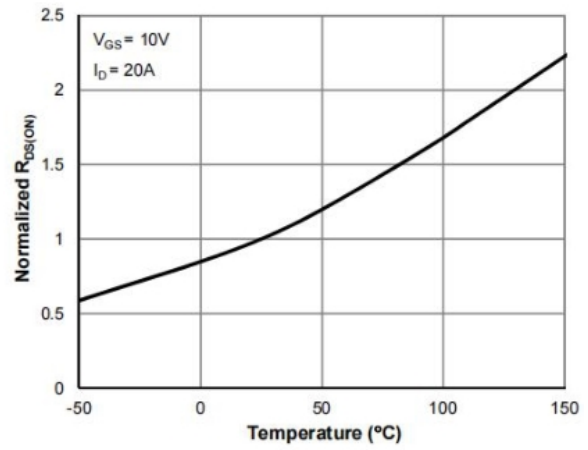
Typical Output Characteristics



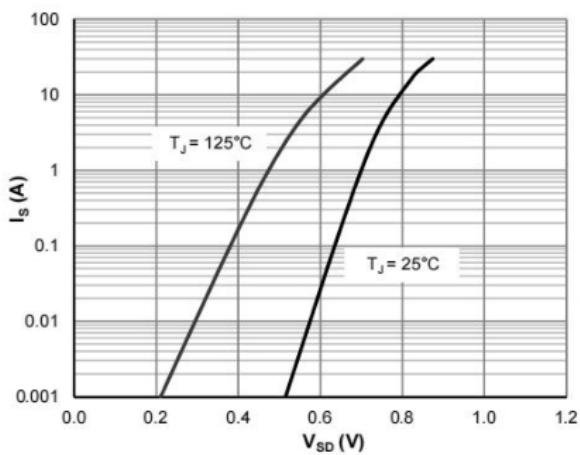
Transfer Characteristics



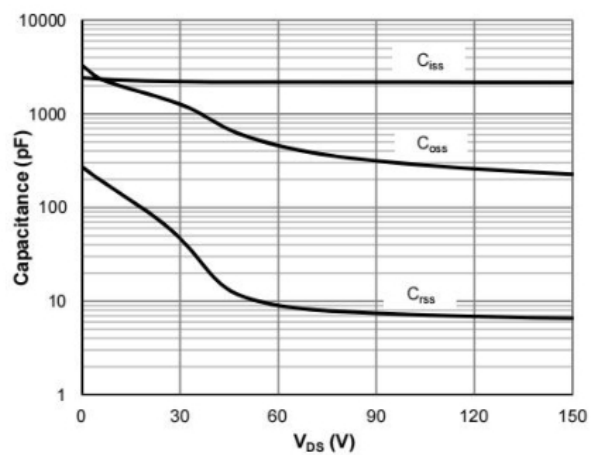
On-Resistance vs. Drain Current



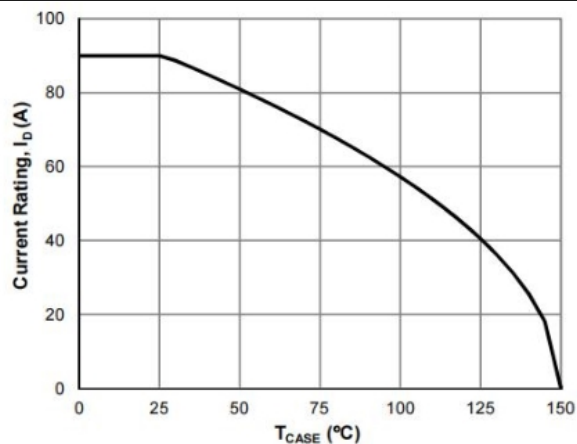
On-Resistance vs. Junction Temperature



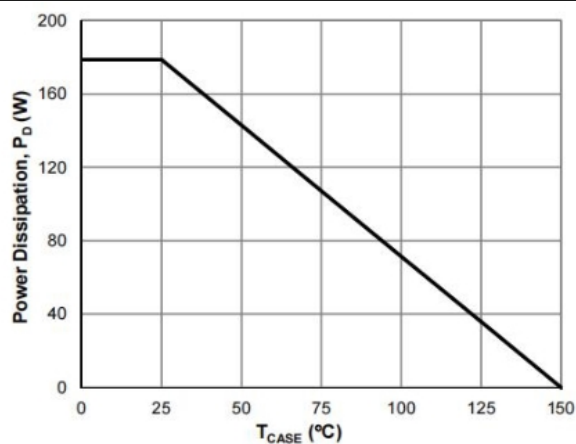
Body-Diode Characteristics



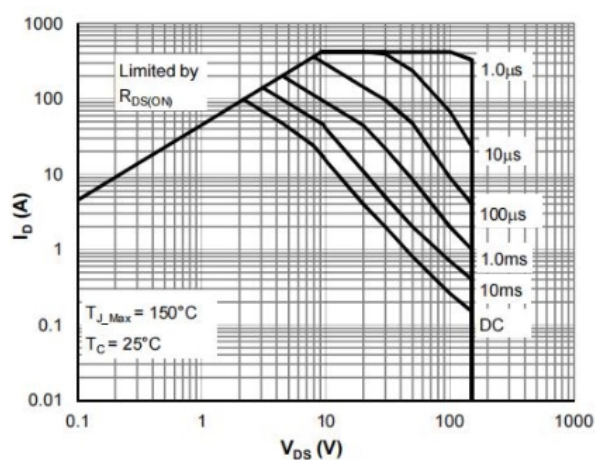
Capacitance Characteristics



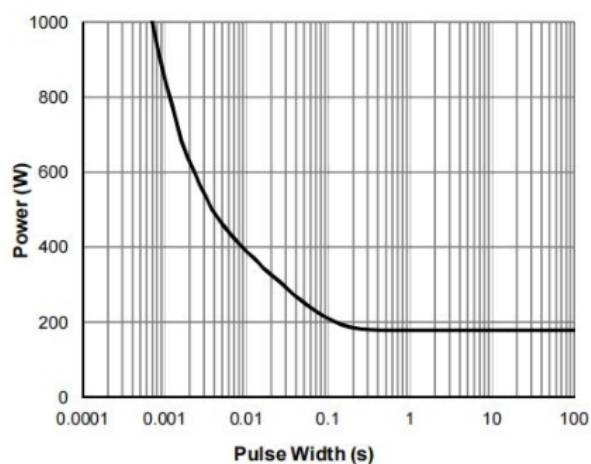
Current De-rating



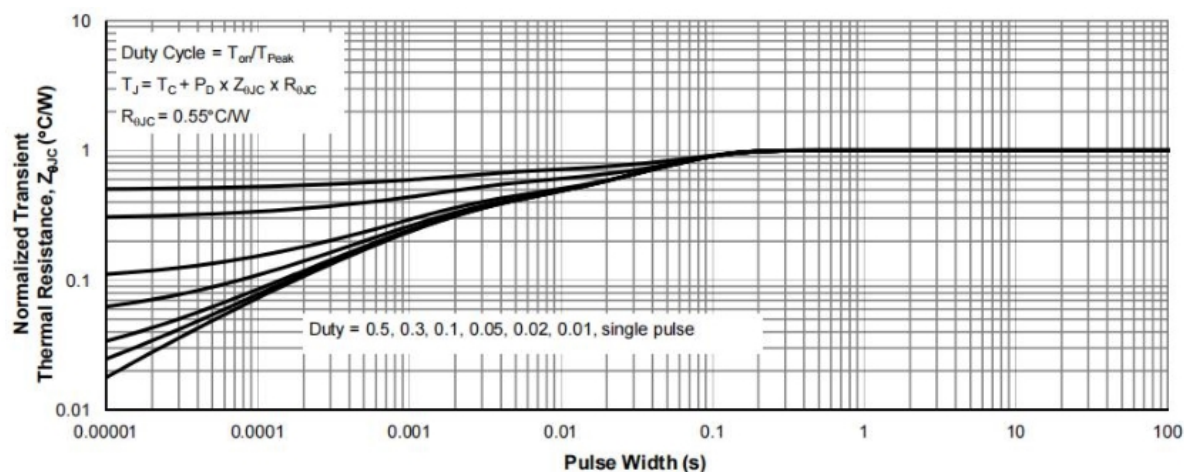
Power De-rating



Maximum Safe Operating Area

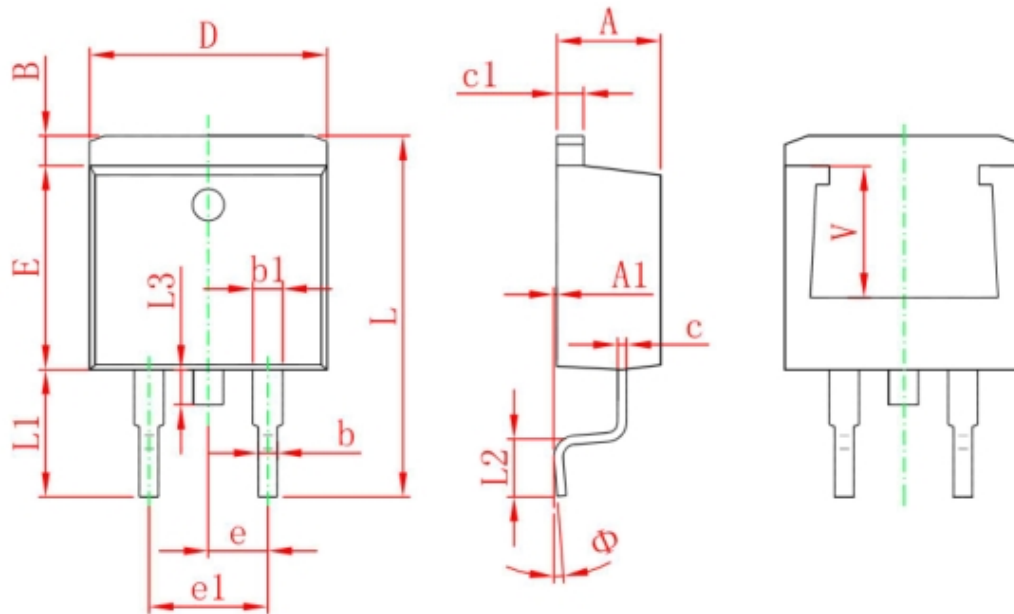


Single Pulse Power Rating, Junction-to-Case



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.	