

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	1.9mΩ@10V	270A

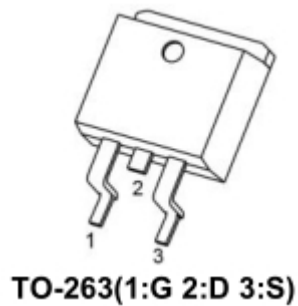
Feature

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

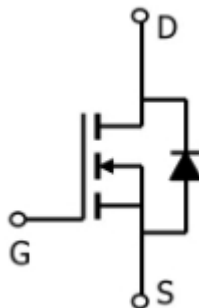
Application

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

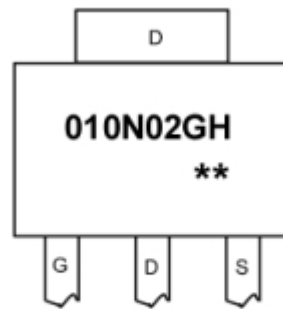
Package



Circuit diagram



Marking



010N02GH : Product code
****** : Week code

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	270	A
Pulsed Drain Current	I _{DM}	1080	A
Total Power Dissipation(T _C =25°C)	P _D	310	W
Single Pulse Avalanche Energy ¹	E _{AS}	550	mJ
Thermal Resistance Junction-Case	R _{θJC}	0.4	°C/ W
Operation and storage temperature	T _{STG} , T _J	-55~ +150	°C

Electrical characteristics

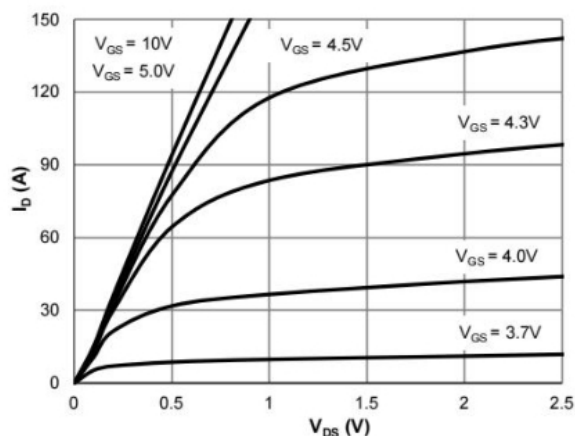
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	100			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =80V,V _{GS} = 0V			1	uA
Gate-Source 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	2.7	4	V
Static Drain-Source on-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A		1.9	2.4	Ω
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 =2.5Ω, R _G =6.0Ω		35		nS
Rise Time	T _r			68		
Turn-Off Delay Time	T _{d(off)}			150		
Fall Time	T _f			105		
Diode Characteristics						
Diode Forward Voltage2	V _{SD}	V _{GS} =0V, I _S =1A			1.2	V

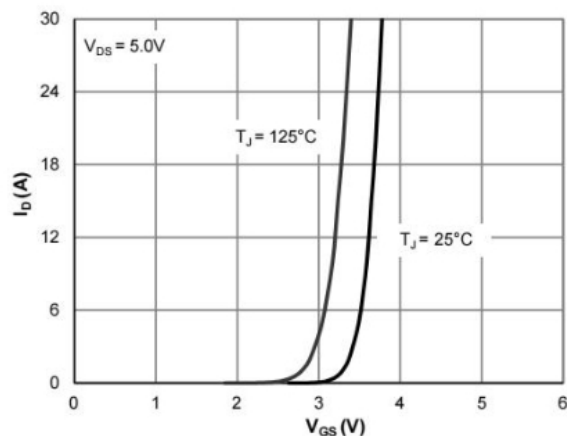
Notes:

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

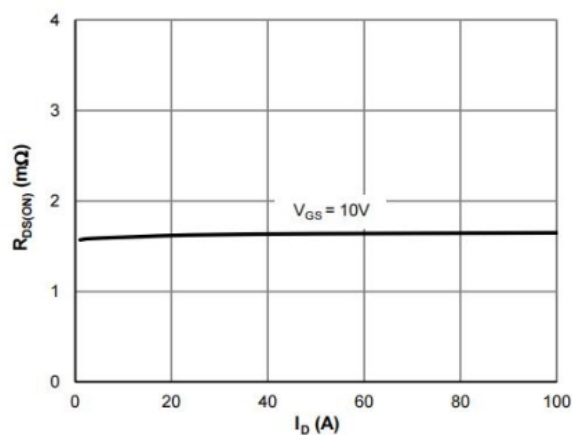
Typical Characteristics



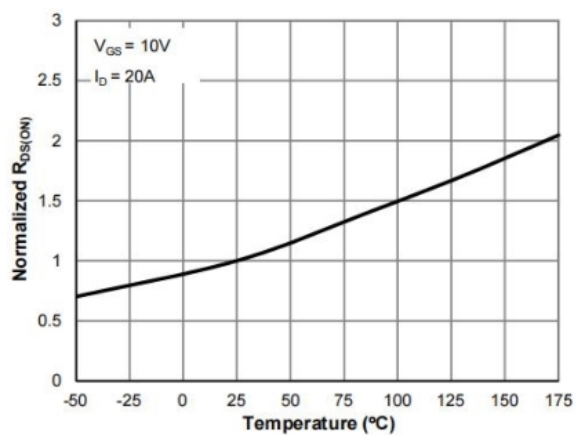
Typical Output Characteristics



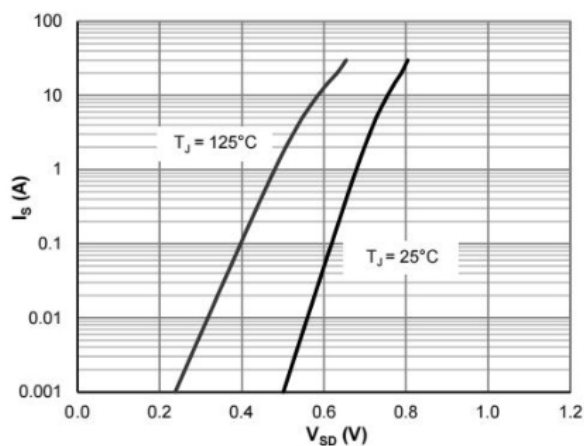
Transfer Characteristics



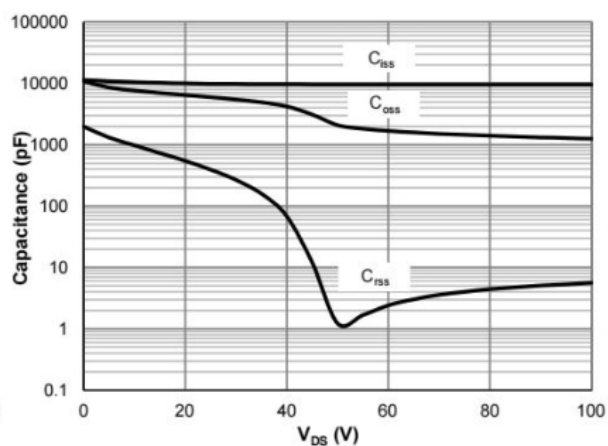
On-Resistance vs. Drain Current



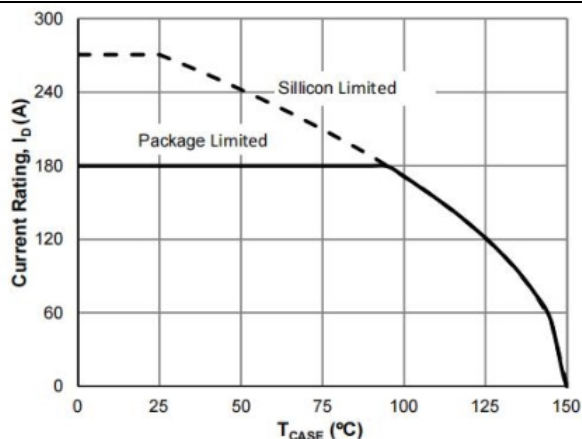
On-Resistance vs. Junction Temperature



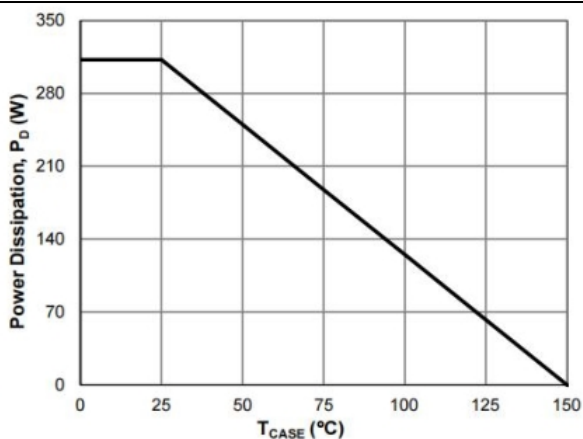
Body-Diode Characteristics



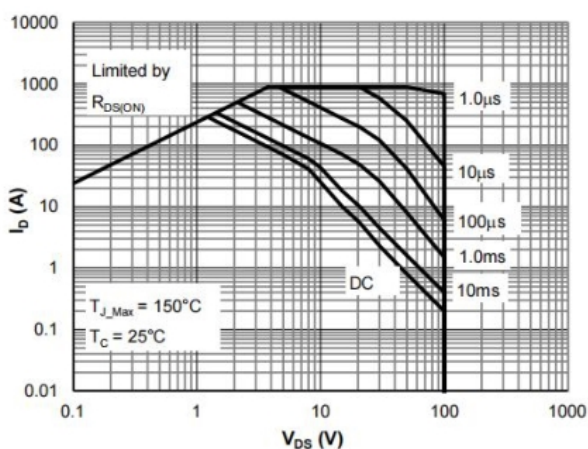
Capacitance Characteristics



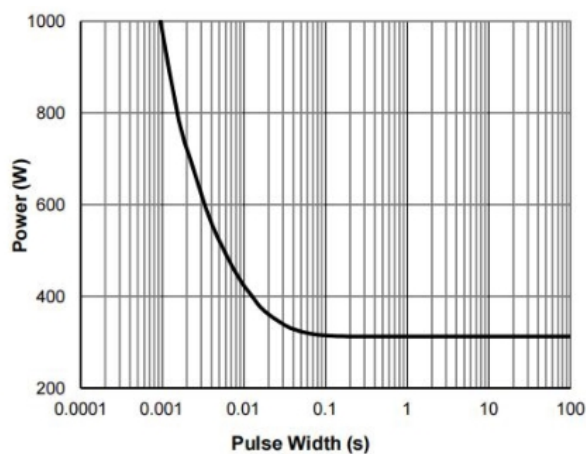
Current De-rating



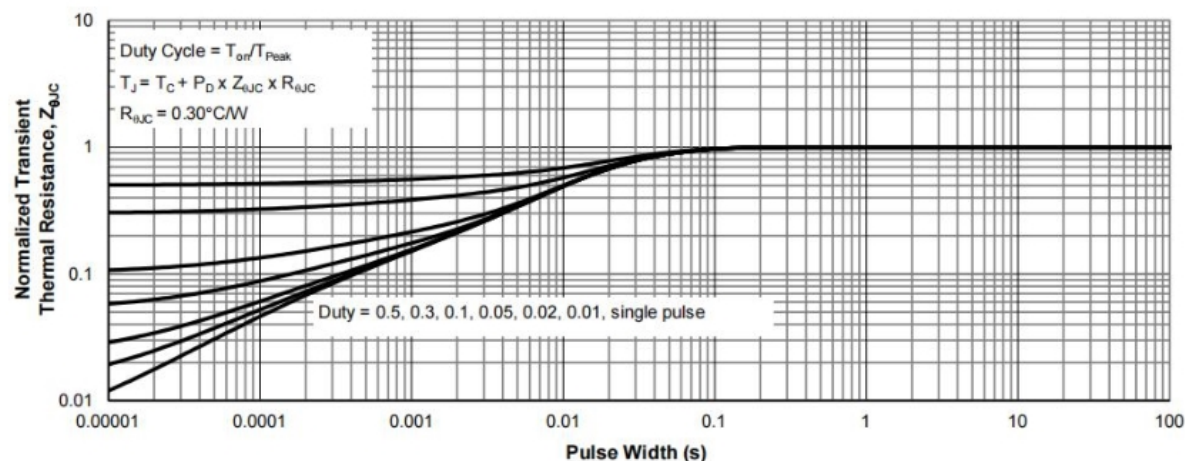
Power De-rating



Maximum Safe Operating Area

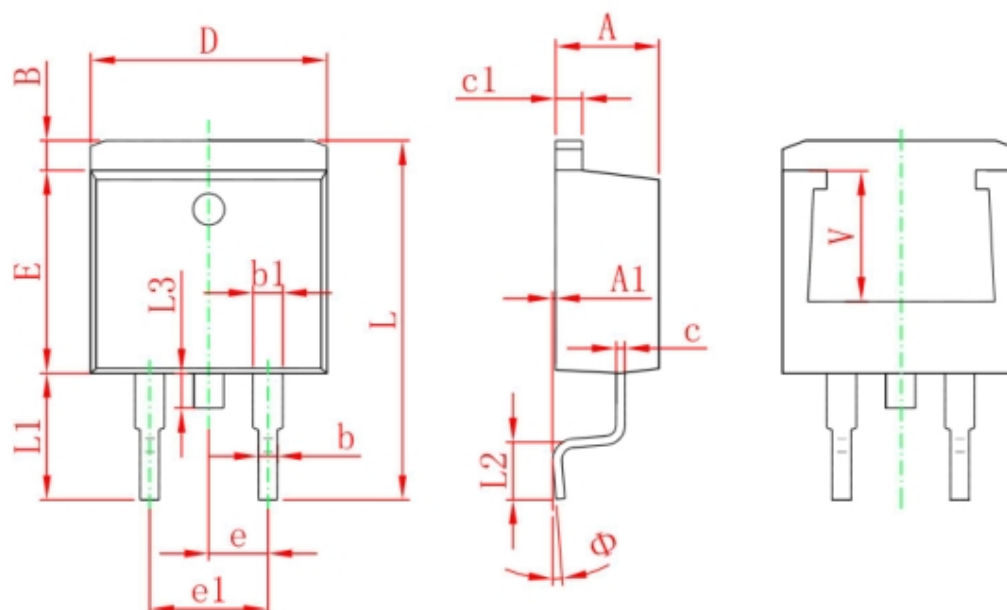


Single Pulse Power Rating, Junction-to-Case



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.	