Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	1.7mΩ@10V	300A

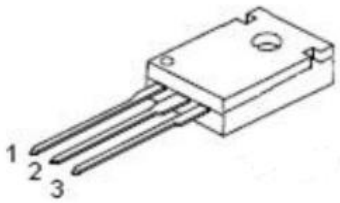
Feature

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

Applications

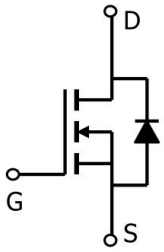
- Power switching application
- DC-DC Converter
- Power Management

Package

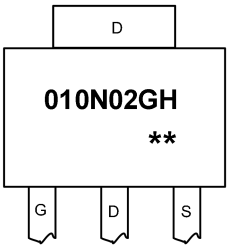


TO-247(1:G 2:D 3:S)

Circuit diagram



Marking



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

Absolute maximum ratings (Ta=25℃,unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain source voltage	V_{DS}	100	V
Gate source voltage	V_{GS}	±20	V
Continuous drain current(Tc=25℃)	I_D	300	A
Pulsed drain current	I_{DM}	1200	A
Power dissipation(Tc=25℃)	P_D	360	W
Single pulsed avalanche energy1)	E_{AS}	550	mJ
Thermal resistance, junction-case	$R_{\theta JC}$	0.34	℃/W
Operation and storage temperature	T_{stg}, T_j	-55 to 150	℃

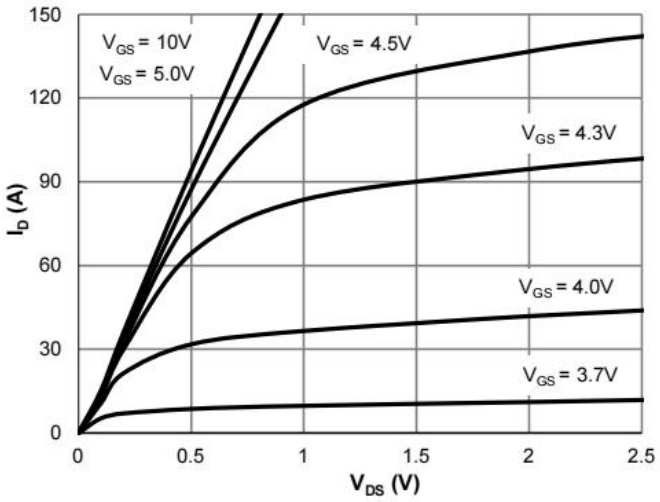
Electrical characteristics (Ta=25℃, unless otherwise noted)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D = 250μA, V_{GS} = 0V	100	-	-	V
Drain Cut-Off Current	I_{DSS}	V_{DS} = 80V, V_{GS} = 0V	-	-	1	μA
Gate Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V	-	-	±0.1	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2.0	2.7	4.0	V
Drain-Source ON Resistance	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 20A	-	1.7	2.2	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} =50V, V_{GS} = 0V, f = 1.0MHz	-	9625	-	pF
Output Capacitance	C_{oss}		-	1608	-	
Reverse Transfer Capacitance	C_{rss}		-	75	-	
Switching Characteristics						
Total Gate Charge	Q_g	VDS=50V , VGS=10V , ID=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, RL=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	-	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	I_S = 1A, V_{GS} = 0V	-	-	1.2	V

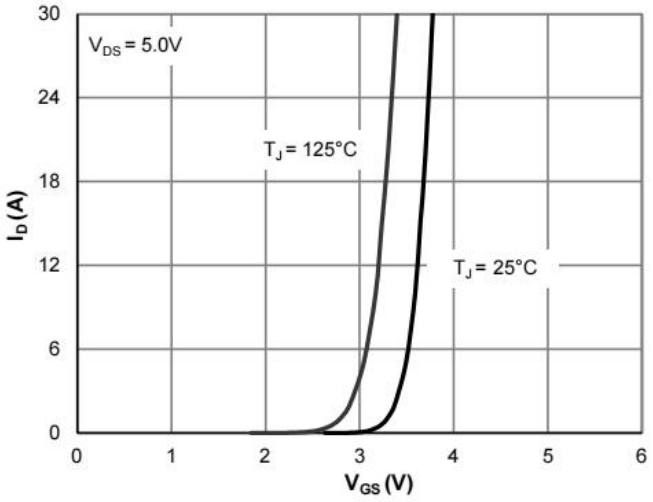
Note:

1. E_{AS} is tested at starting Tj = 25℃, V_{DD}=50V,V_{GS} = 10V,L = 0.5mH, Rg=25mΩ;

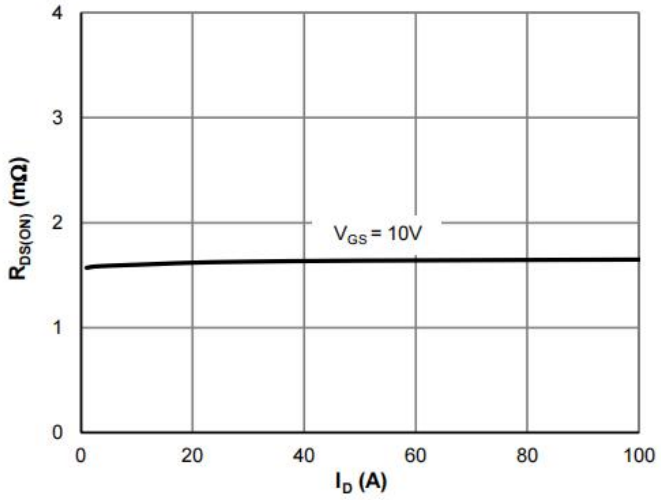
Typical Characteristics



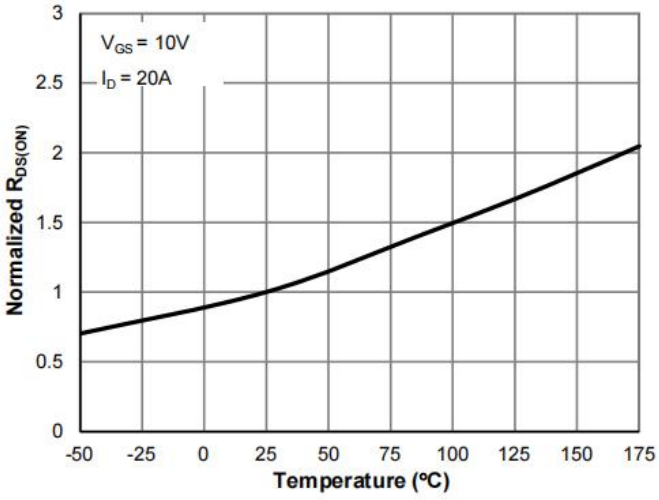
Typical Output Characteristics



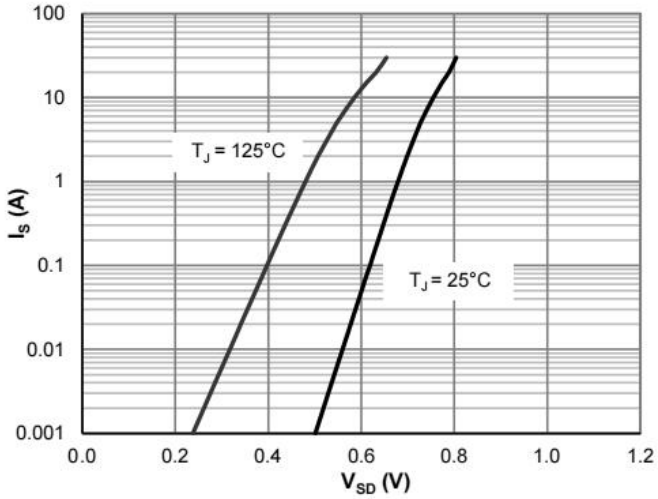
Transfer Characteristics



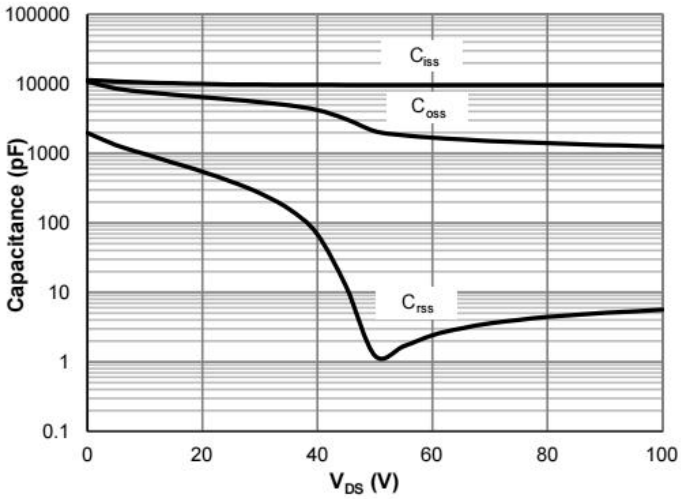
On-Resistance vs.Drain Current



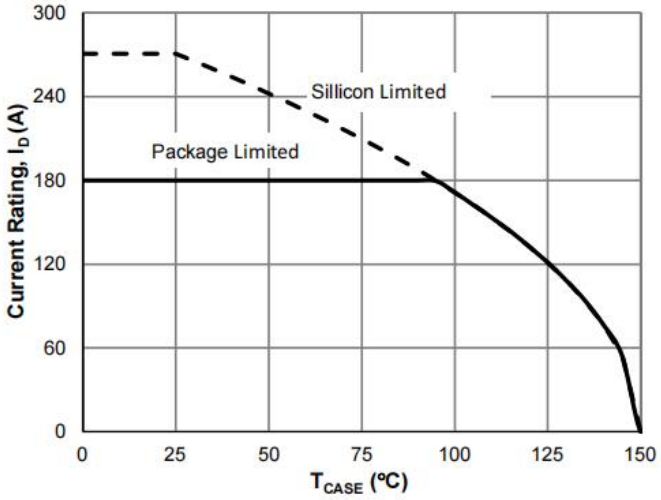
On-Resistance vs.Junction Temperature



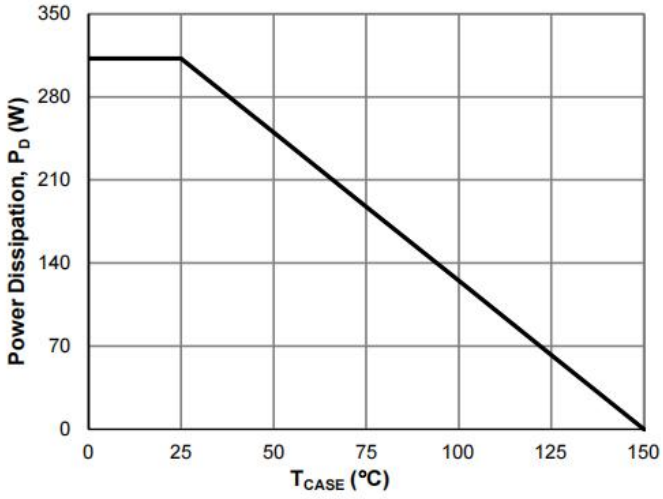
Body-Diode Characteristics



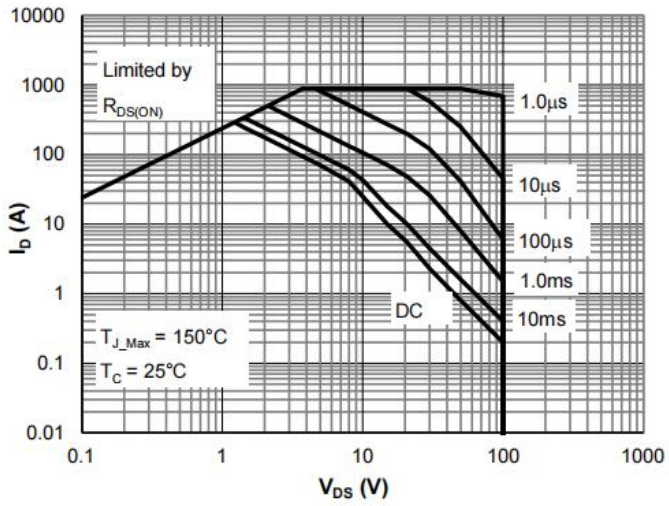
Capacitance Characteristics



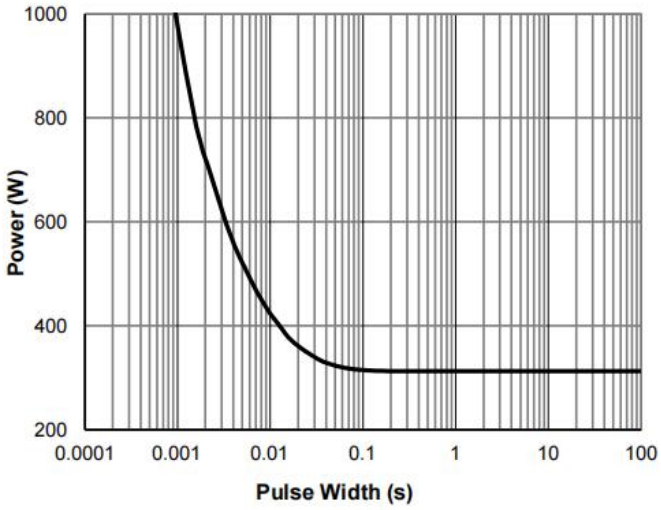
Current De-rating



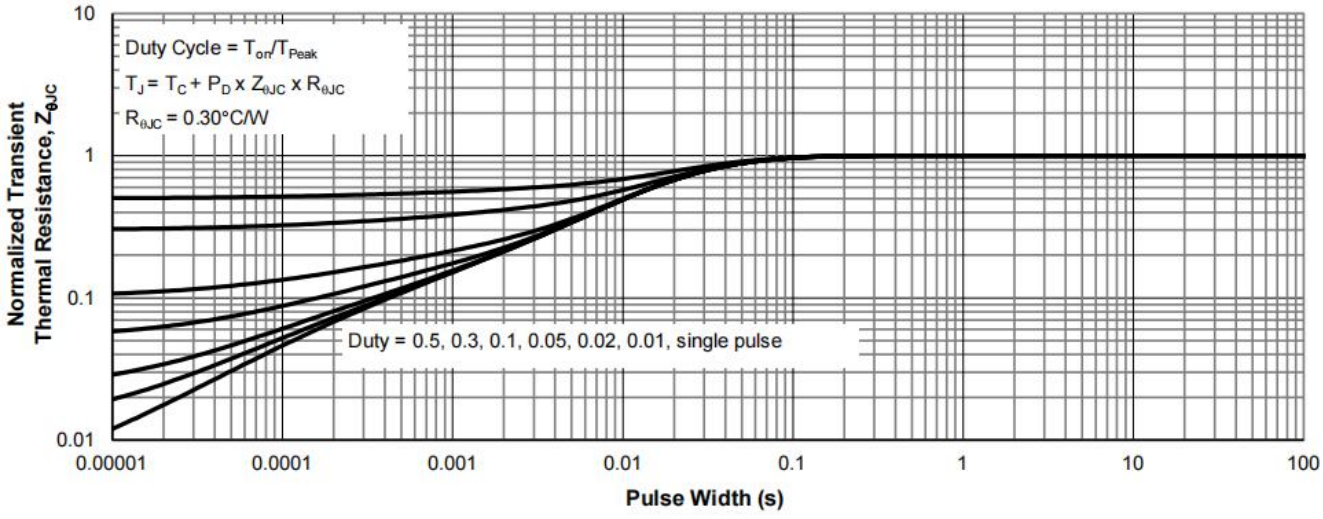
Power De-rating



Maximum Safe Operating Area

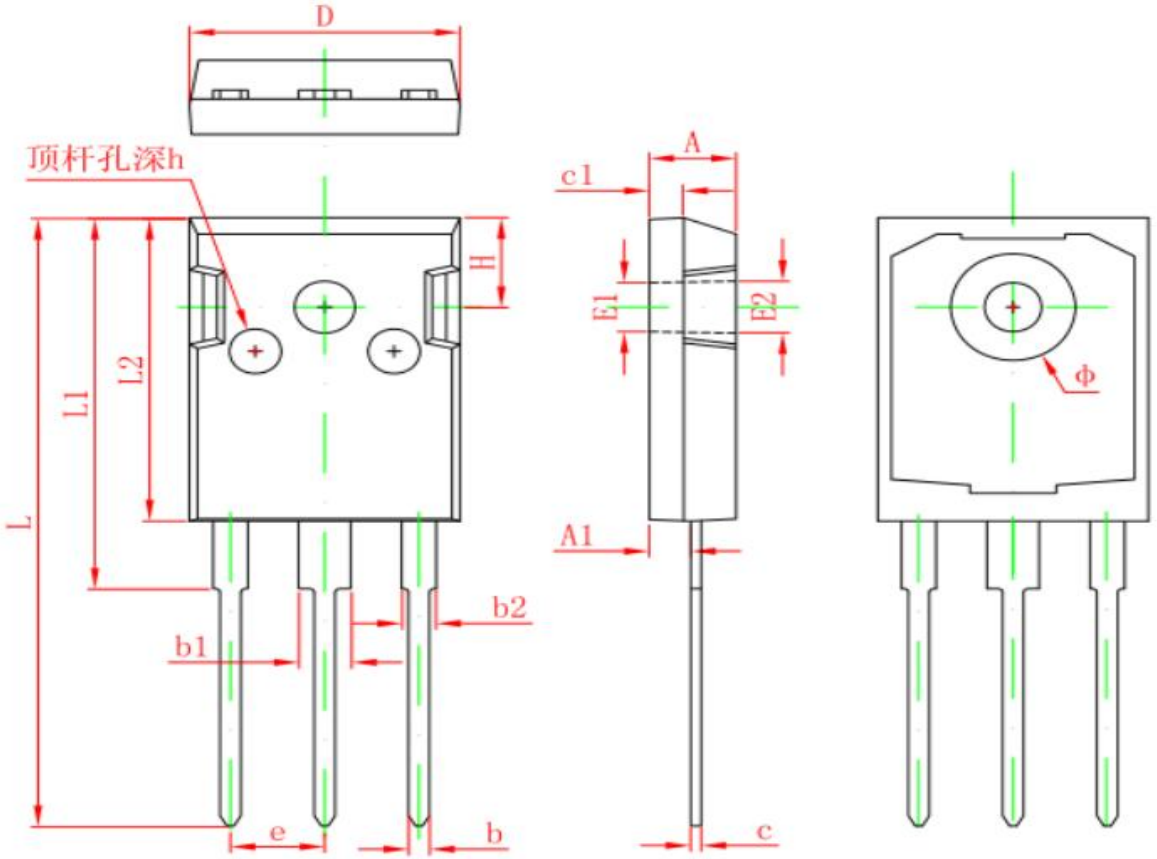


Single Pulse Power Rating,Junction-to-Case



Normalized Maximum Transient Thermal Impedance

TO-247 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF.		0.138 REF.	
E2	3.600 REF.		0.142 REF.	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
Φ	7.100	7.300	0.280	0.287
e	5.450 TYP.		0.215 TYP.	
H	5.980 REF.		0.235 REF.	
h	0.000	0.300	0.000	0.012