

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	1.8m Ω @10V	260A

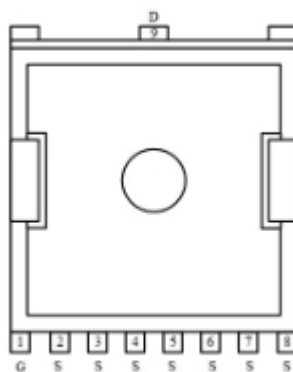
Feature

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

Application

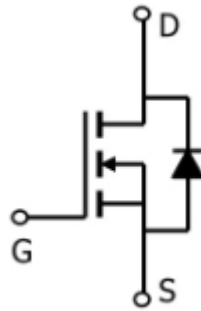
- Power switching application
- DC-DC Converter
- Power Management

Package

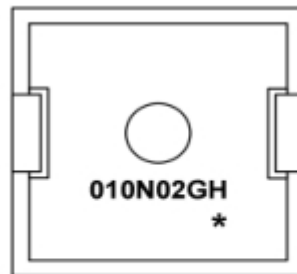


Toll

Circuit diagram



Marking



010N02GH : Product code
* : Month 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	260	A
Pulsed Drain Current	I _{DM}	860	A
Power dissipation (T _C =25°C)	P _D	280	W
Single Pulse Avalanche Energy ¹	E _{AS}	851	mJ
Thermal Resistance Junction-Case	R _{θJC}	0.45	°C/ W
Operation and storage temperature	T _{STG, T_J}	-55~ +175	°C

Electrical characteristics

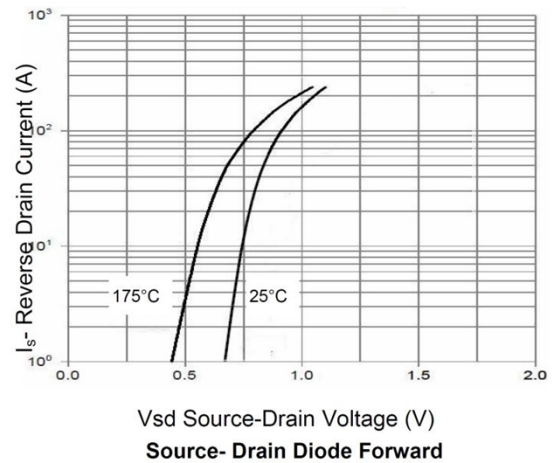
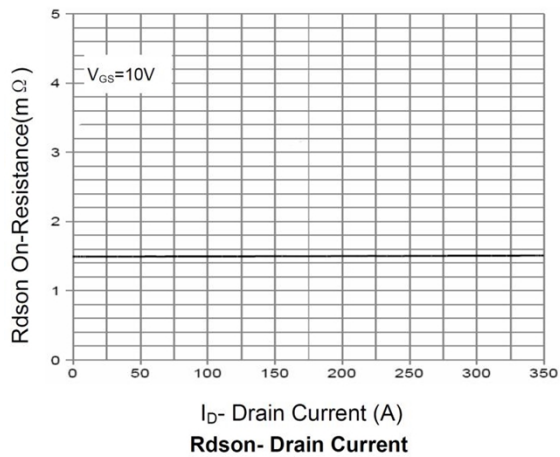
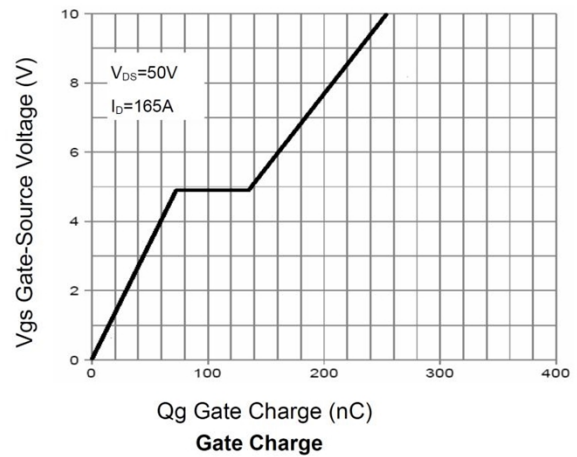
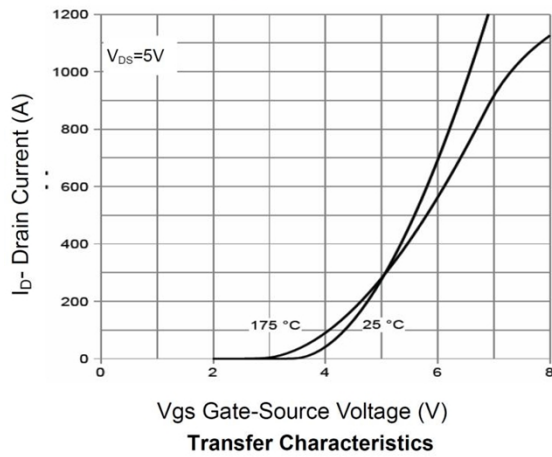
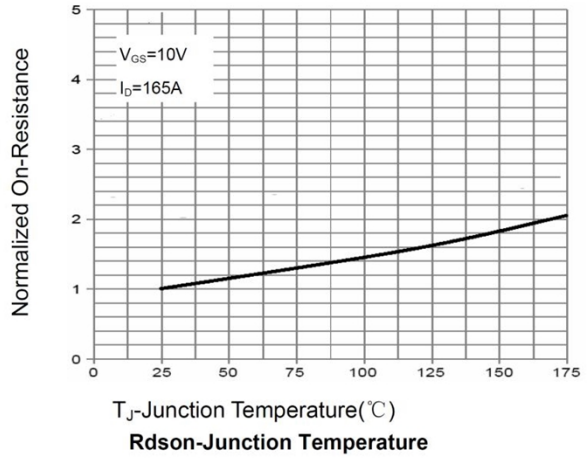
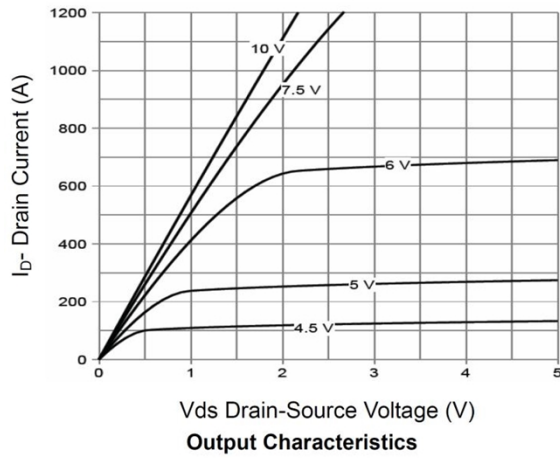
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

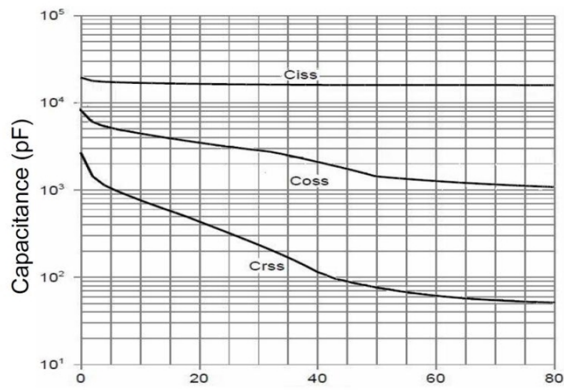
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	100			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =80V,V _{GS} = 0V			1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±0.1	uA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.7	3.5	4.3	V
Static Drain-Source on-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A		1.8	2.3	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:

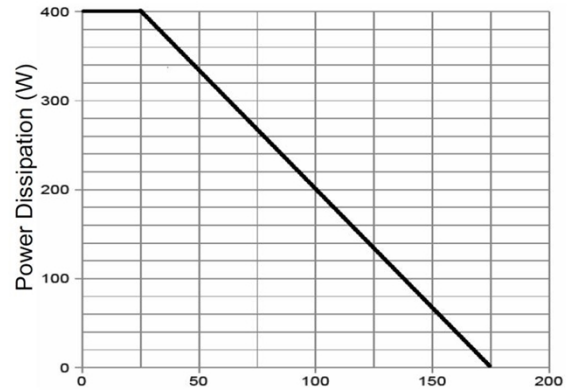
1. E AS is tested at starting $T_j = 25^{\circ}\text{C}$, $V_{DD} = 50V, V_{GS} = 10V, L = 0.1mH, R_g=25 m\Omega$;

Typical Characteristics

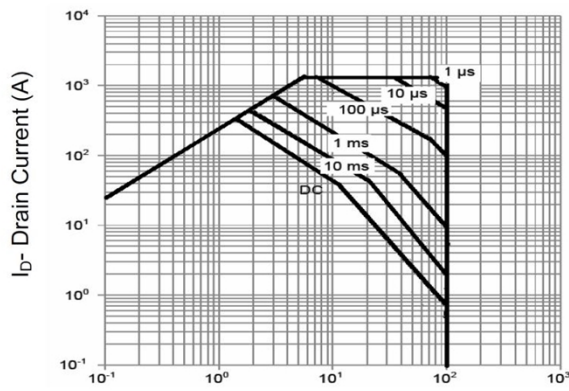




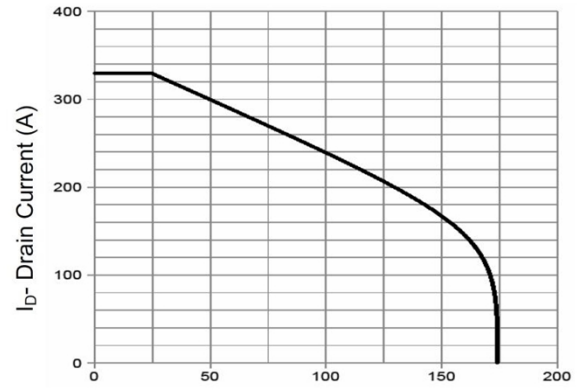
Vds Drain-Source Voltage (V)
Capacitance vs Vds



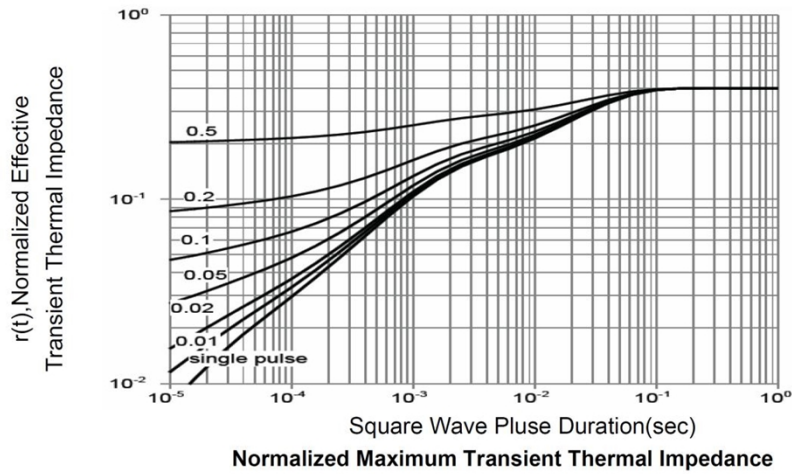
TJ-Junction Temperature(°C)
Power De-rating



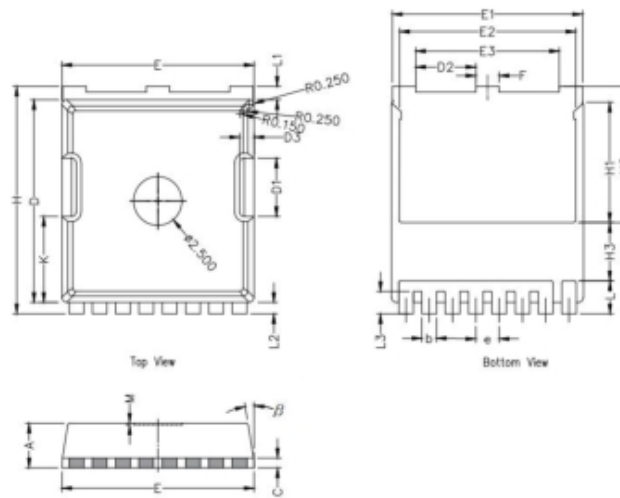
Vds Drain-Source Voltage (V)
Safe Operation Area



TJ-Junction Temperature (°C)
Current De-rating



TOLL Package Information



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	2.20	2.30	2.40
b	0.65	0.75	0.85
C	0.508 REF		
D	10.25	10.40	10.55
D1	2.85	3.00	3.15
E	9.75	9.90	10.05
E1	9.65	9.80	9.95
E2	8.95	9.10	9.25
E3	7.25	7.40	7.55
e	1.20 BSC		
F	1.05	1.20	1.35
H	11.55	11.70	11.85
H1	6.03	6.18	6.33
H2	6.85	7.00	7.15
H3	3.00 BSC		
L	1.55	1.70	1.85
L1	0.55	0.7	0.85
L2	0.45	0.6	0.75
M	0.08 REF.		
β	8°	10°	12°
K	4.25	4.40	4.55