Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	8.5mΩ@10V	65A
	11mΩ@4.5V	

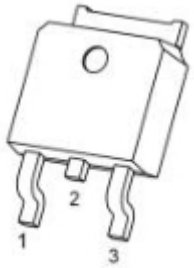
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Advanced Split Gate Trench Technology
- 100% Single Pulse avalanche energy Test

Application

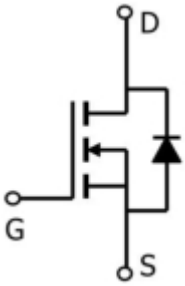
- Power switching application
- PWM Application
- DC-DC Converter

Package



TO-252(1:G 2:D 3:S)

Circuit diagram



Marking

010N08G =Device Code
** =Week Code

Absolute maximum ratings

(T_a=25℃ 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℃)	I_D	65	A
Pulsed Drain Current[2]	I_{DM}	260	A
Single Pulse Avalanche Energy[3]	E_{AS}	156	mJ
Total Power Dissipation[4](T_C =25℃)	P_D	90	W
Thermal Resistance Junction-Case[1]	$R_{\theta JC}$	1.38	℃/ W
Storage Temperature Range	T_{STG}	-55~ +150	℃
Operating Junction Temperature Range	T_J	-55~ +150	℃

Electrical characteristics

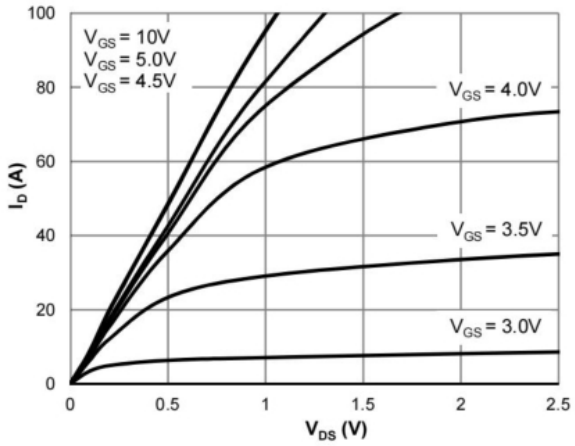
(T_A=25℃, unless otherwise noted)

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 , T_J=25℃			1	uA
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±20V , V_{DS}=0V			±100	uA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.2	1.9	2.5	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =20A		8.5	12	mΩ
		V_{GS} =4.5V, I_D =15A		11	15	
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V, f=1MHz		1635		pF
Output Capacitance	C_{oss}			339		
Reverse Transfer Capacitance	C_{rss}			22		
Switching Characteristics						
Total Gate Charge (4.5V)	Q_g	V_{DS}=50V, V_{GS}=10V, I_D=20A		14		nC
Gate-Source Charge	Q_{gS}			5		
Gate-Drain Charge	Q_{gd}			7		
Turn-On Delay Time	$T_{d(on)}$	V_{DD}=50V, V_{GS}=10V, R_L=2.5Ω , R_G=6Ω		8		nS
Rise Time	T_r			16		
Turn-Off Delay Time	$T_{d(off)}$			31		
Fall Time	T_f			27		
Drain-Source Diode Characteristics						
Diode forward voltage[2]	V_{SD}	V_{GS}=0V, I_S=1A, T_J=25℃			1.2	V

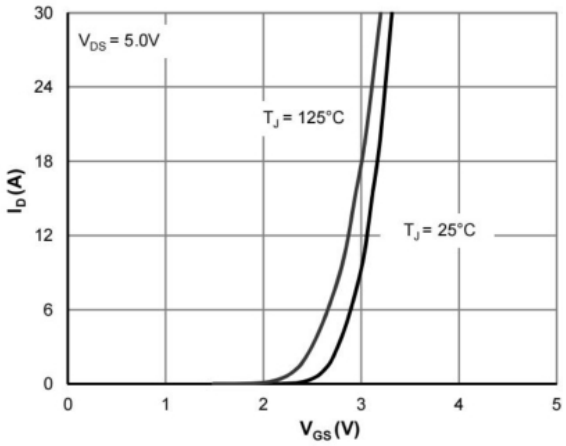
Notes:

1. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3. The EAS data shows Max. rating . The test condition is V_{DD}=50V,V_{GS}=10V,L=0.5mH,Rg=25Ω
4. The power dissipation is limited by 150℃ junction temperature

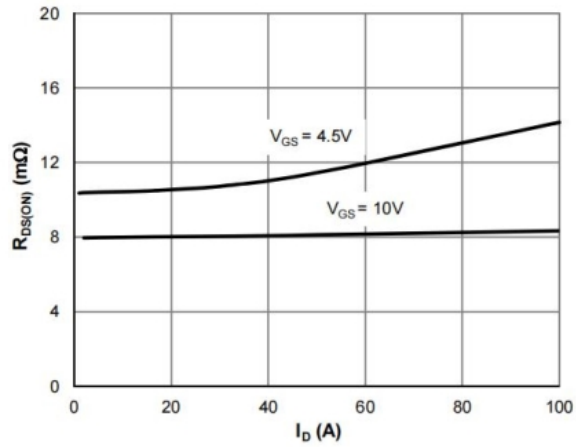
Typical Characteristics



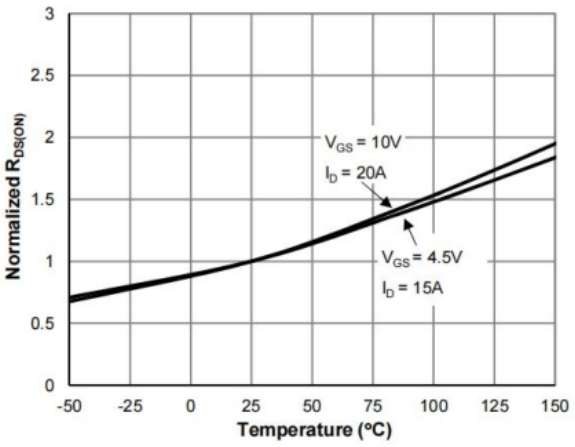
Typical Output Characteristics



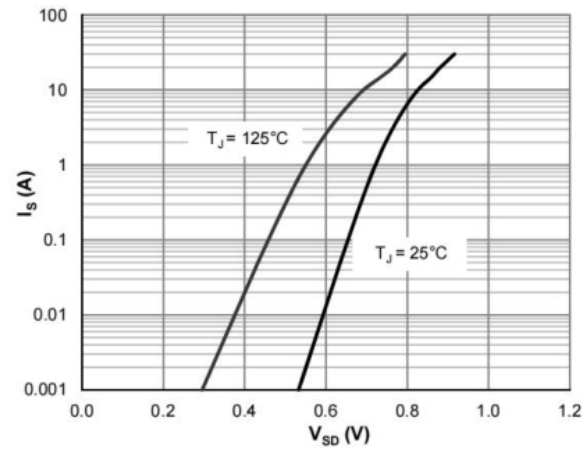
Transfer Characteristics



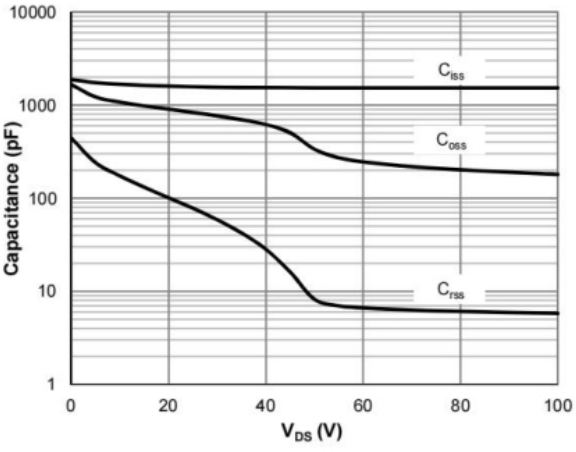
On-Resistance vs.Drain Current



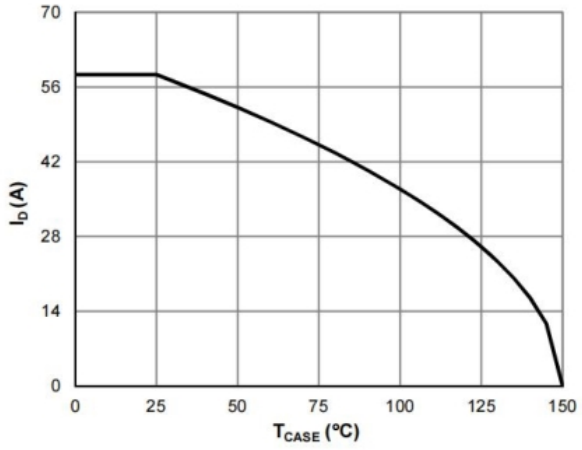
On-Resistance vs.Junction Temperature



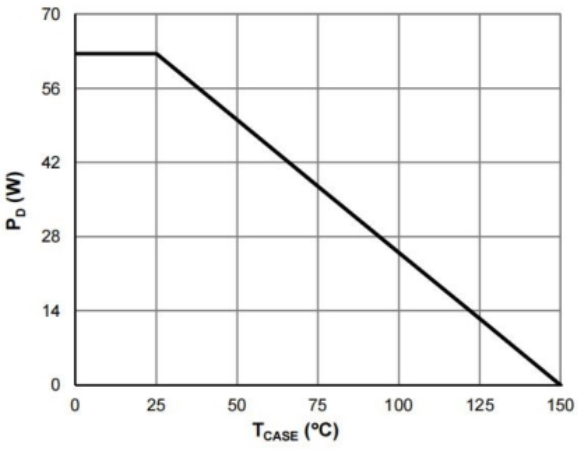
Body-Diode Characteristics



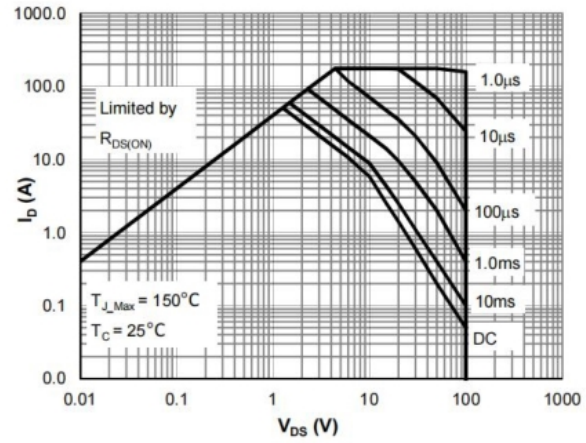
Capacitance Characteristics



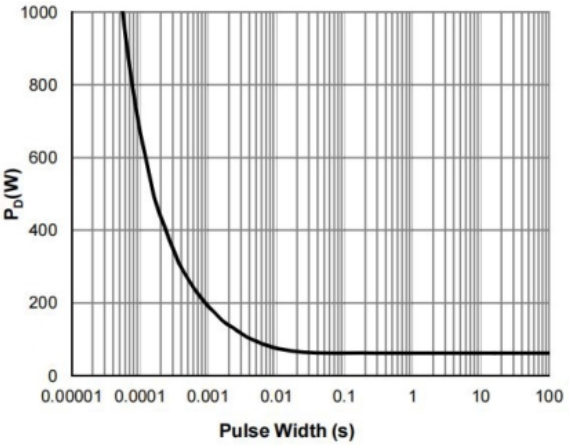
Current De-rating



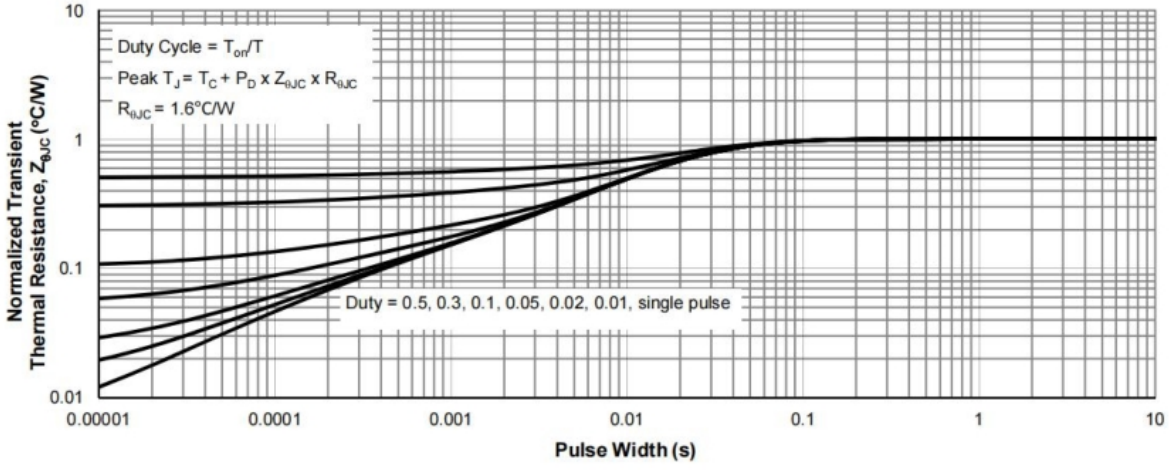
Power De-rating



Maximum Safe Operating Area

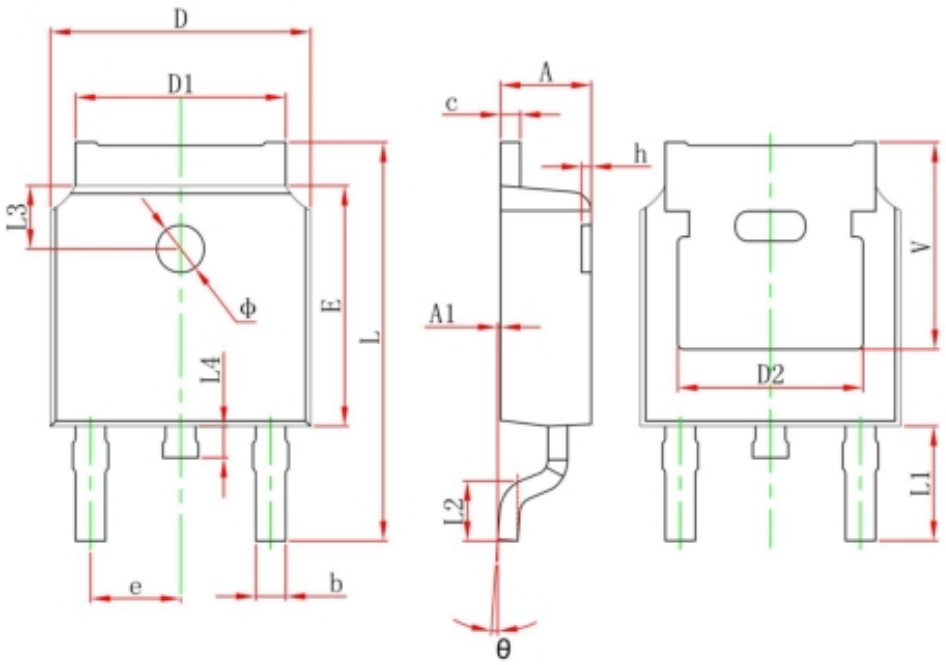


Single Pulse Power Rating,Junction-to-Case



Normalized Maximum Transient Thermal Impedance

TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	