

Product Summary

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



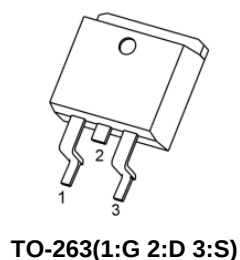
Feature

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

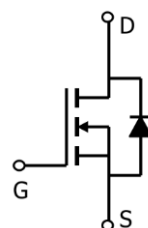
Applications

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

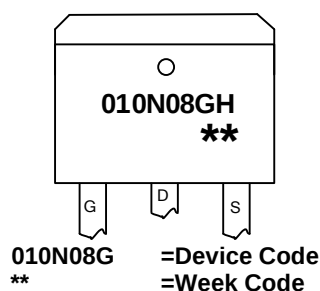
Package



Circuit diagram



Marking



Order Information

Device	Package	Unite/Tape
SP010N08GTD	TO-263-3L	800

**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current (Tc=25°C)	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 (Tc=25°C)	P_D	90	W
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	1.38	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

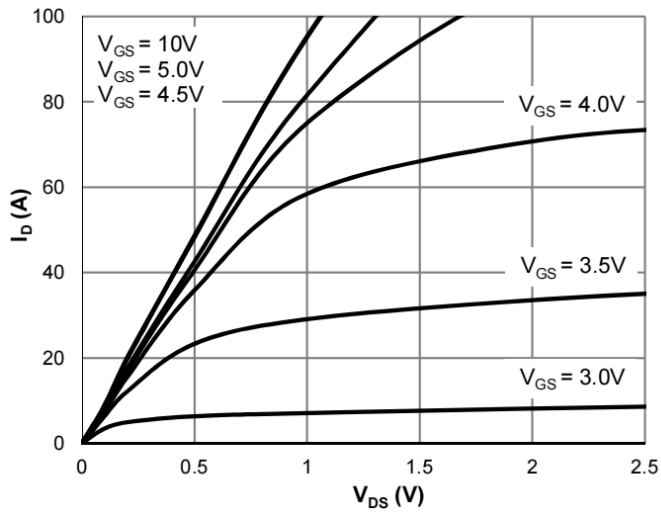
Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=250uA	100	---	---	V
Drain-Source Leakage Current	IDSS	VDS=80V , VGS=0V , TJ=25℃	---	---	1	uA
Gate-Source Leakage Current	IGSS	VGS=±20V , VDS=0V	---	---	±100	nA
Gate Threshold Voltage	VGS(th)	VGS=VDS , ID =250uA	1.2	1.9	2.5	V
Static Drain-Source On-Resistance ²	RDS(ON)	VGS=10V , ID=20A	---	8.5	12	mΩ
		VGS=4.5V , ID=15A	---	11	15	
Dynamic Characteristics						
Input Capacitance	Ciss	VDS=50V , VGS=0V , f=1MHz	---	1635	---	pF
Output Capacitance	Coss		---	339	---	
Reverse Transfer Capacitance	Crss		---	22	---	
Switching Characteristics						
Total Gate Charge (4.5V)	Qg	VDS=50V , VGS=10V , ID=20A	---	14	---	nC
Gate-Source Charge	Qgs		---	5	---	
Gate-Drain Charge	Qgd		---	7	---	
Turn-On Delay Time	Td(on)	VDD=50V, VGS=10V , RL=2.5Ω , RG=6Ω	---	8	---	ns
Rise Time	Tr		---	16	---	
Turn-Off Delay Time	Td(off)		---	31	---	
Fall Time	Tf		---	27	---	
Source-Drain Diode Characteristics						
Diode Forward Voltage ²	VSD	VGS=0V , IS=1A , TJ=25℃	---	---	1.2	V

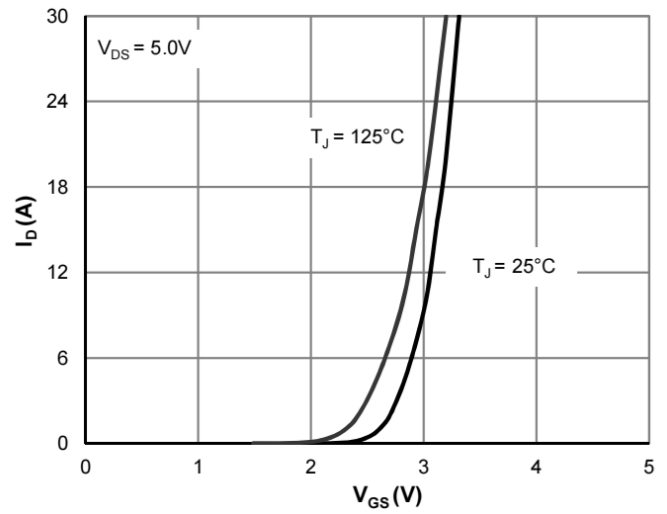
Note :

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 $\leq 300\mu s$, duty cycle $\leq 2\%$
3. The EAS data shows Max. rating . The test condition is $V_{DD}=50V$, $V_{GS}=10V$, $L=0.5mH$, $R_g=25\Omega$
4. The power dissipation is limited by 150°C junction temperature

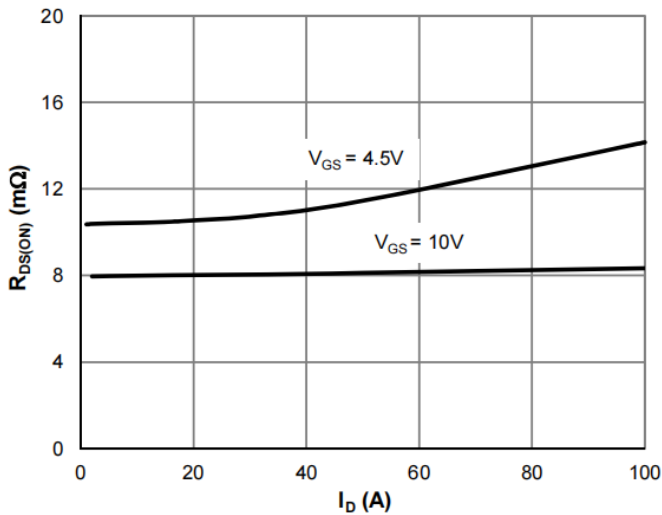
Typical Characteristics



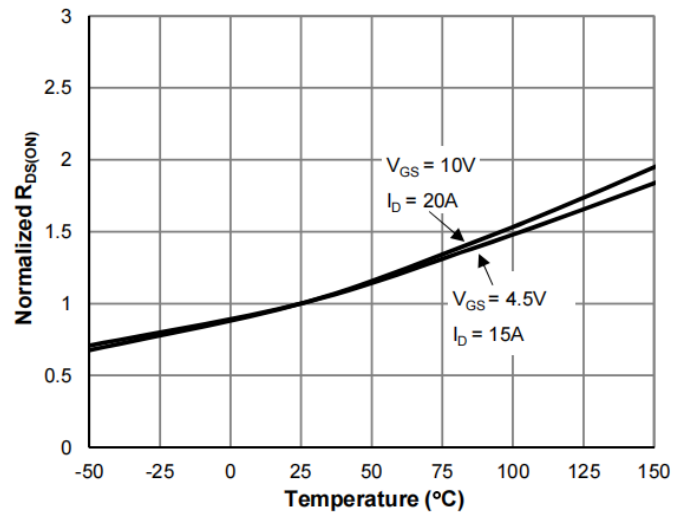
Typical Output Characteristics



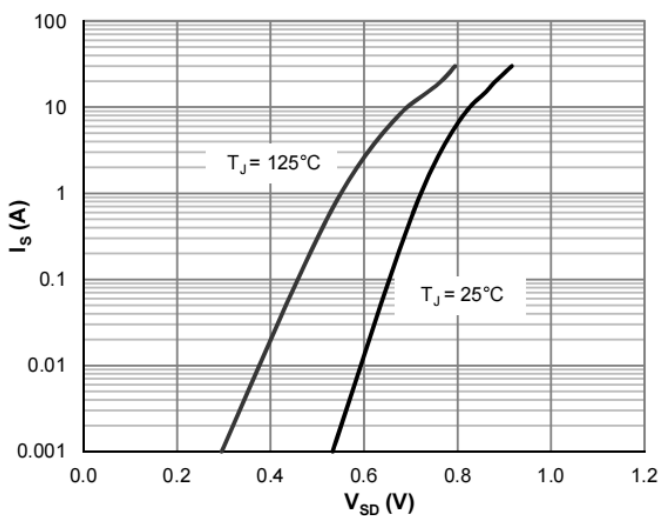
Transfer Characteristics



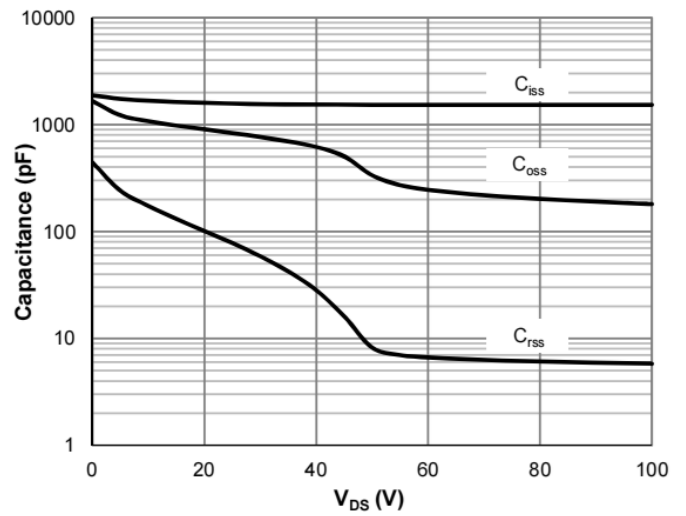
On-Resistance vs. Drain Current



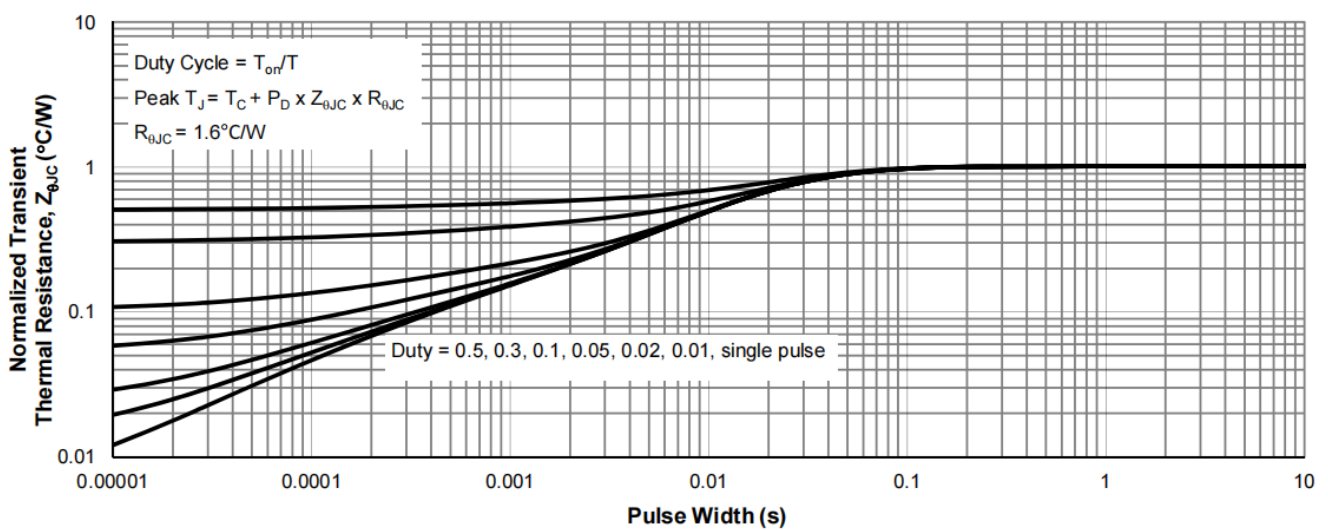
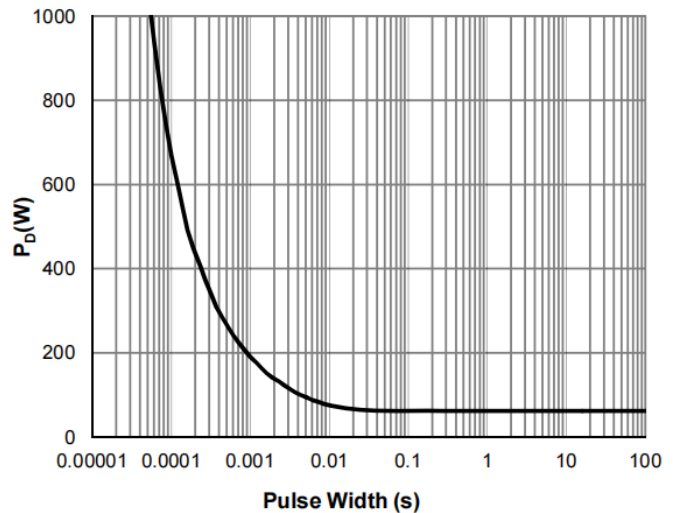
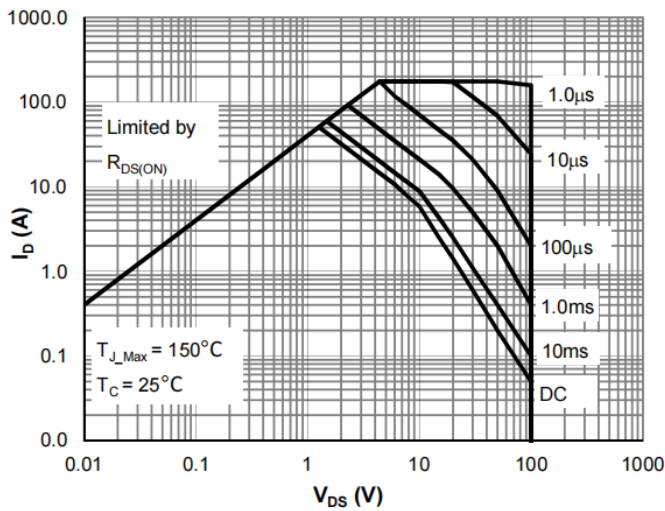
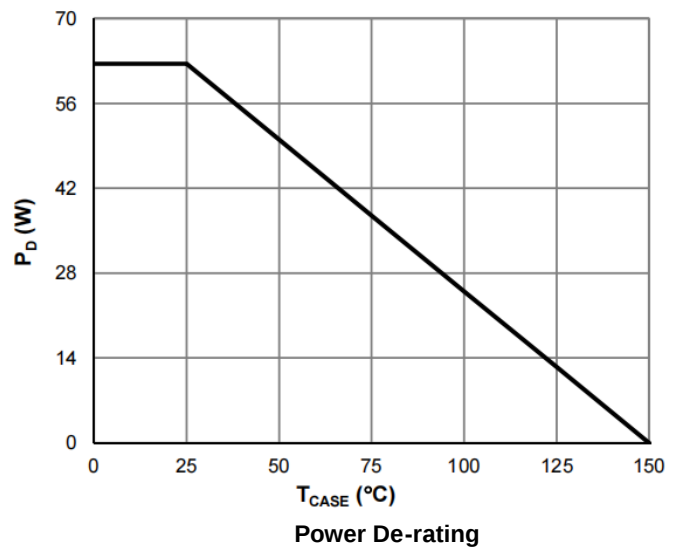
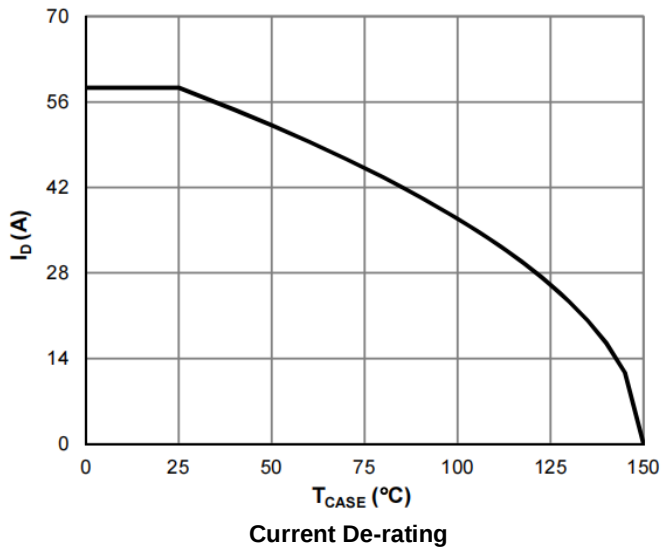
On-Resistance vs. Junction Temperature



Body-Diode Characteristics

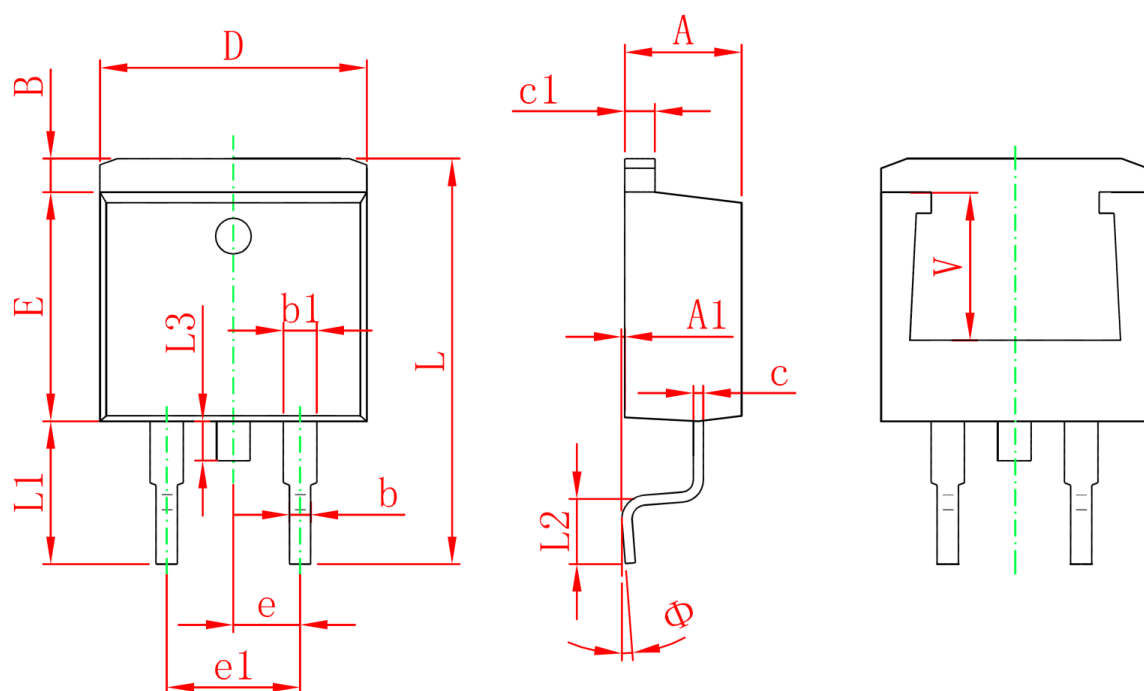


Capacitance Characteristics





TO-263 Package Outline Dimensions



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.	