

Product Summary

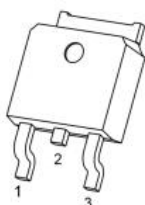
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	35mΩ@10V	25A
	40mΩ@4.5V	

Feature

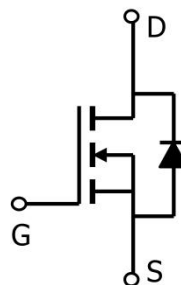
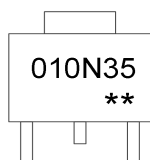
- Low Gate Charge
- Advanced High Cell Density Trench Technology
- 100% Single Pulse avalanche energy Test

Application

- Power Management Switches
- DC/DC Converters

Package

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

Circuit diagram**Marking**

010N35 : Product code
** : Week code.

**Absolute maximum ratings (Ta=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(Tc=25°C)	I_D	25	A
Pulsed Drain Current	I_{DM}	100	A
Single Pulse Avalanche Energy ¹	E_{AS}	100	mJ
Total Power Dissipation(Tc=25°C)	P_D	85	W
Thermal Resistance from Junction-to-Case	$R_{\theta JC}$	1.47	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

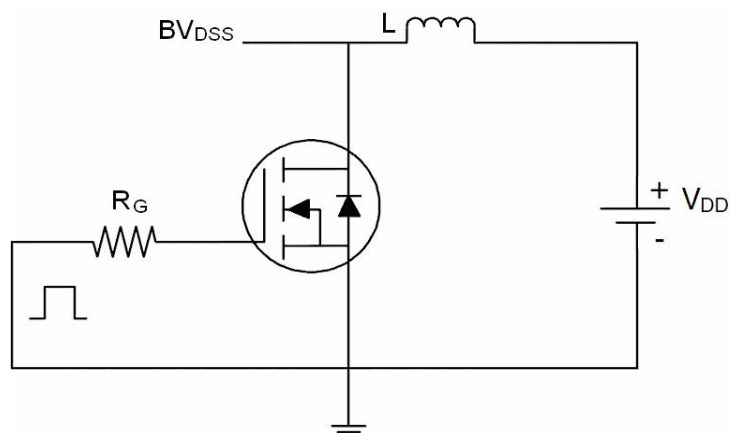
Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V ID=250μA	100	-	-	V
Zero Gate Voltage Drain Current	IDSS	VDS=80V,VGS=0V	-	-	1	μA
Gate-Body Leakage Current	IGSS	VGS=±20V,VDS=0V	-	-	±100	nA
Gate Threshold Voltage	VGS(th)	VDS=VGS,ID=250μA	1	1.5	2.5	V
Drain-Source On-State Resistance	RDS(ON)	VGS=10V, ID=10A	-	35	50	mΩ
		VGS=4.5V, ID=6A	-	40	55	
Dynamic Characteristics						
Input Capacitance	Ciss	VDS = 50V, VGS =0V, f =1MHz	-	2631	-	PF
Output Capacitance	Coss		-	102	-	
Reverse Transfer Capacitance	Crss		-	63	-	
Switching Characteristics						
Turn-on Delay Time	td(on)	VGS =10V, VDD =50V, RG = 3Ω, ID= 10A	-	9	-	nS
Turn-on Rise Time	tr		-	8	-	
Turn-Off Delay Time	td(off)		-	32	-	
Turn-Off Fall Time	tf		-	9	-	
Total Gate Charge	Qg	VGS = 10V,VDS = 50V, ID=25A	-	45	-	nC
Gate-Source Charge	Qgs		-	7.9	-	
Gate-Drain Charge	Qgd		-	8.7	-	
Drain-Source Diode Characteristics						
Diode Forward Voltage	VSD	VGS=0V,IS=1A	-	-	1.2	V

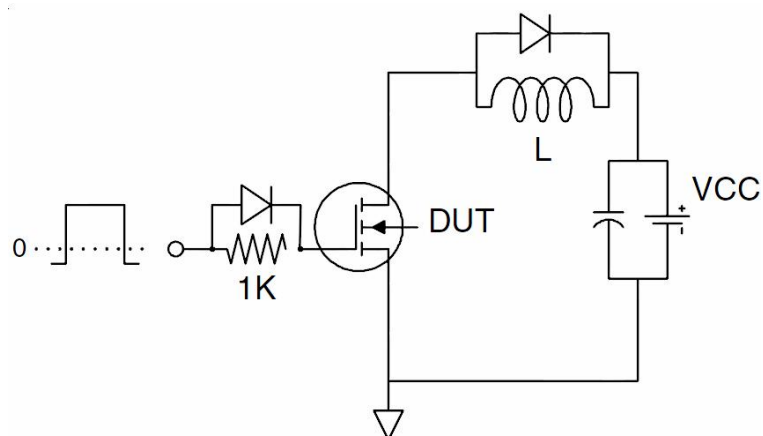
Notes:1. EAS condition: $V_{DD}=50V, V_{GS}=10V, L=0.5mH, R_g=25\Omega$

Test Circuit

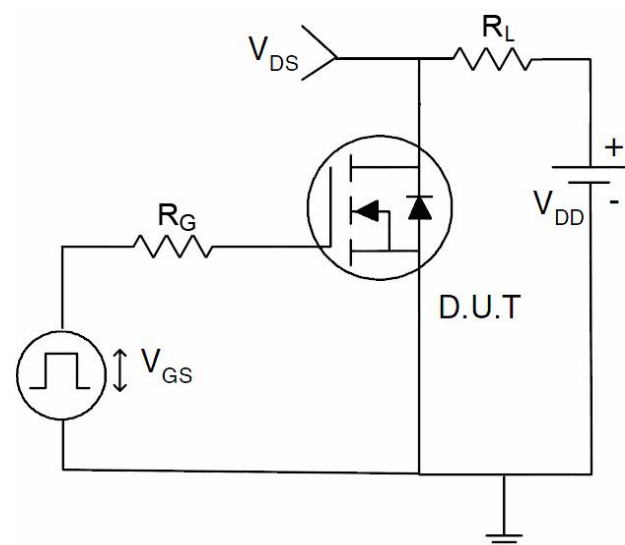
1) EAS Test Circuits



2) Gate Charge Test Circuit

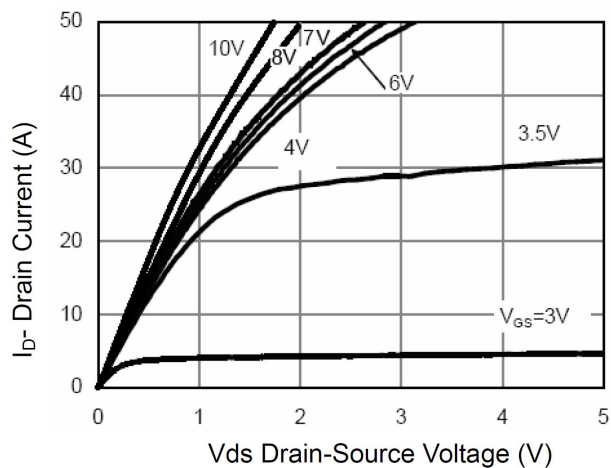


3) Switch Time Test Circuit

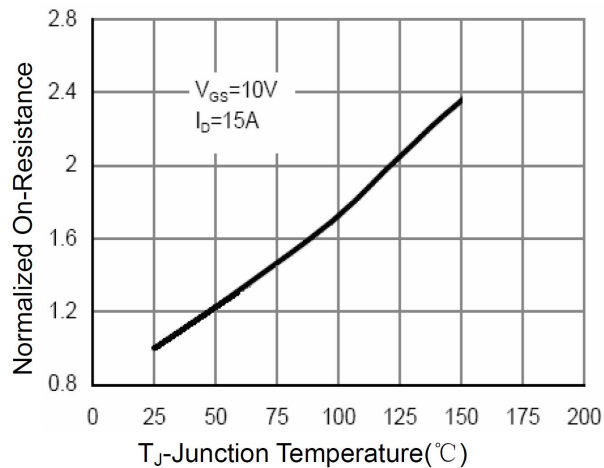




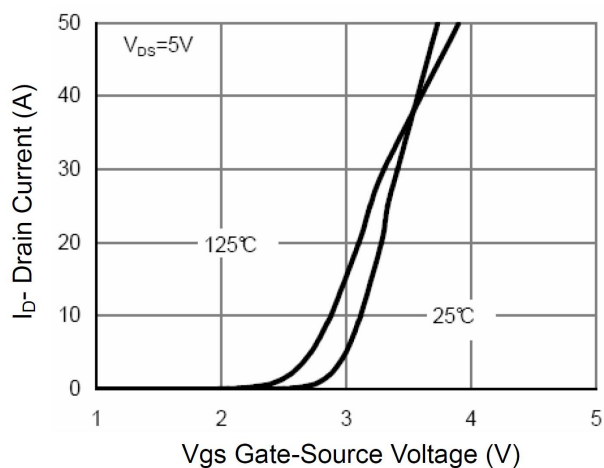
Typical Characteristics



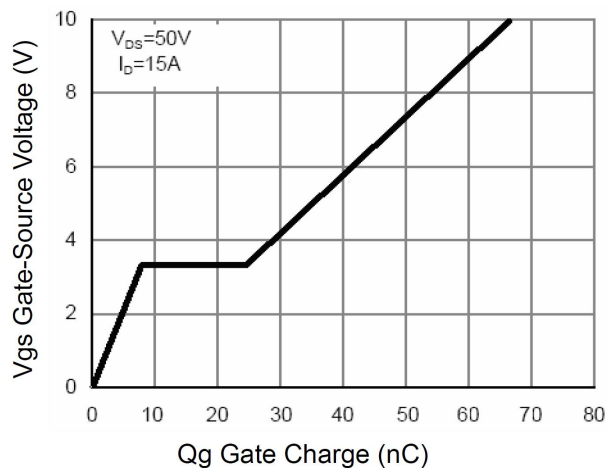
Output Characteristics



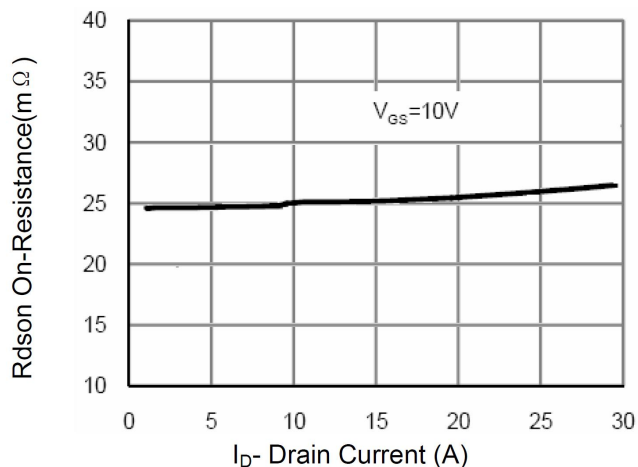
R_{dson} -Junction Temperature



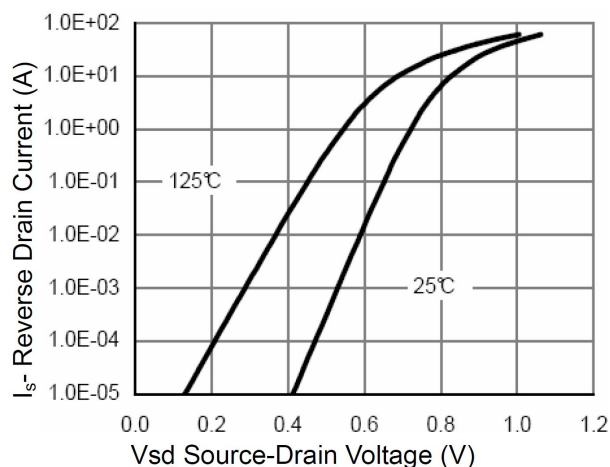
Transfer Characteristics



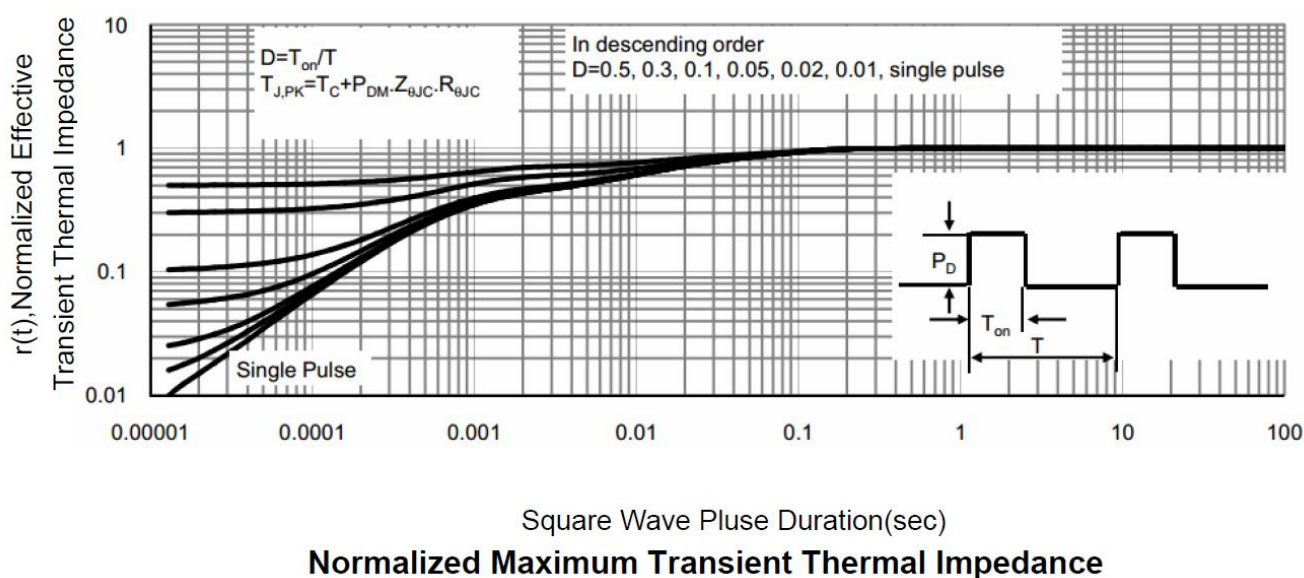
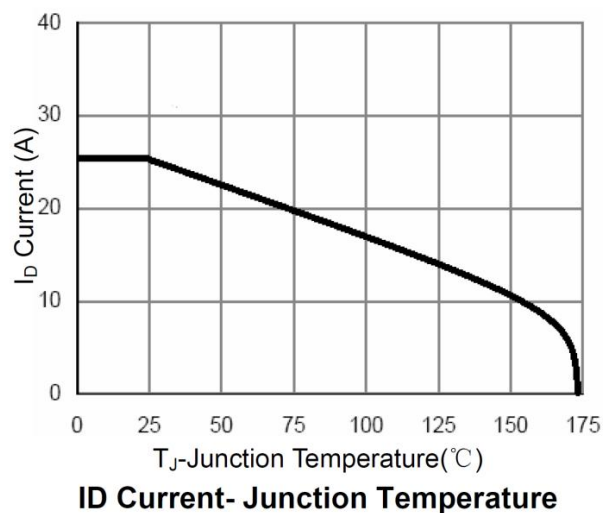
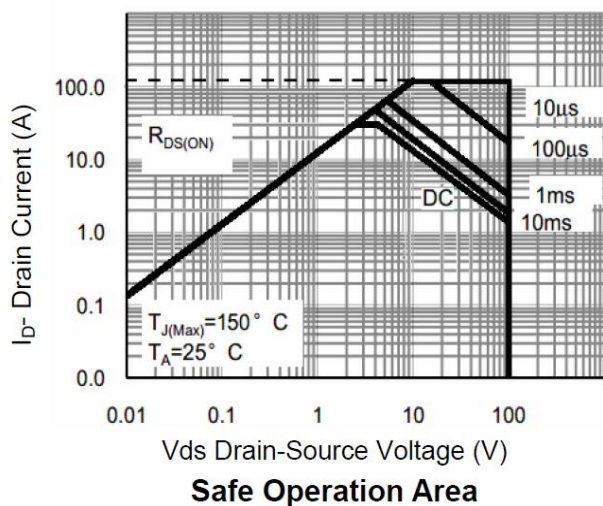
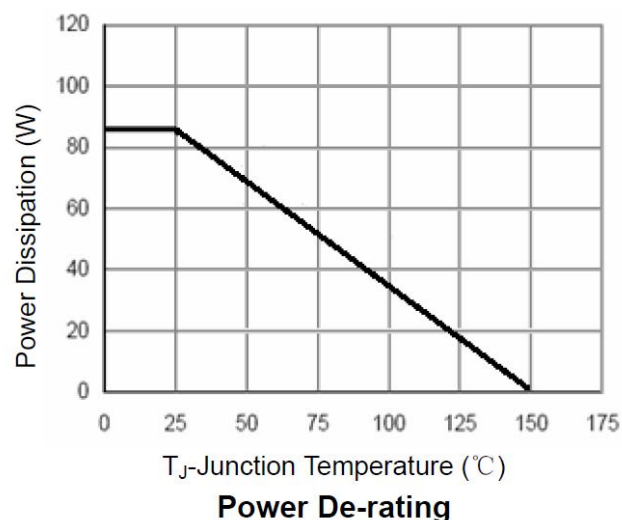
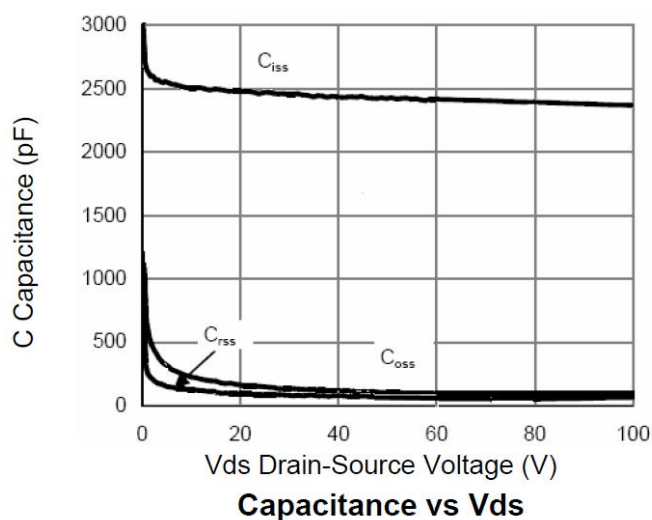
Gate Charge



R_{dson} - Drain Current

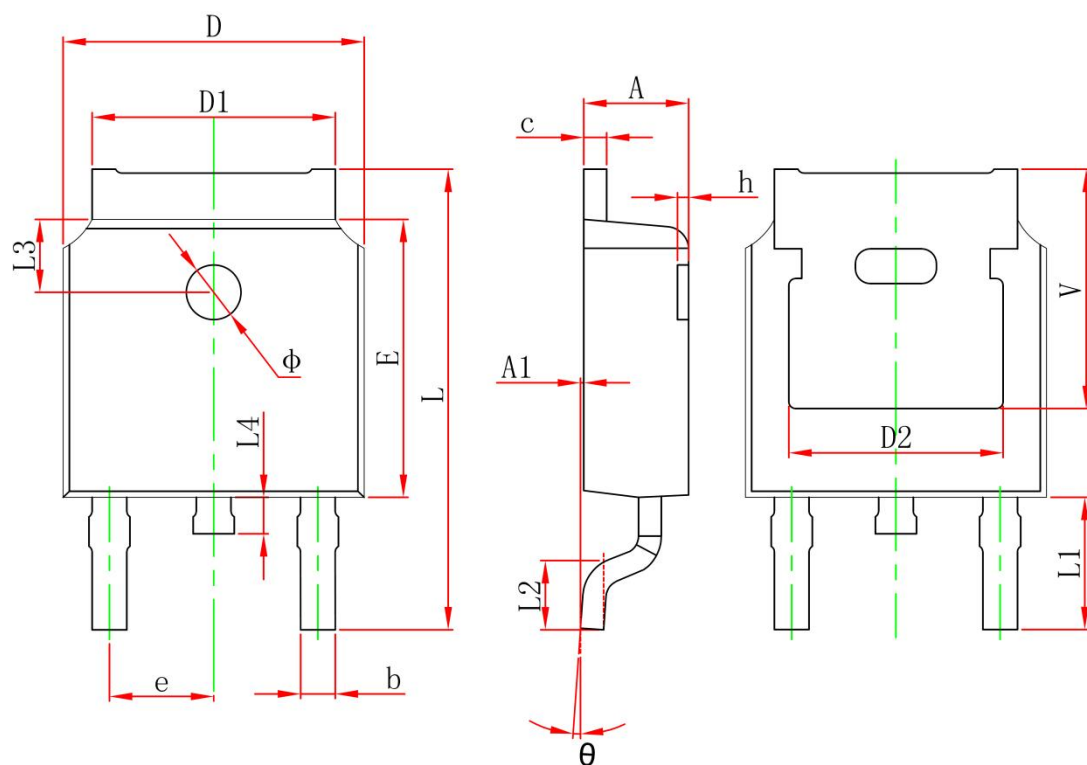


Source- Drain Diode Forward





SP010N35TH
100V N-Channel MOSFET



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.	