Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
900V	0.75Ω@10V	10A

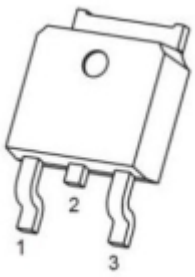
Feature

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

Applications

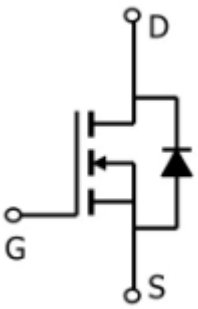
- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification

Package



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

Circuit diagram



Marking

10N90 =Device Code
** =Week Code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	900	V
Gate-Source Voltage	V_{GS}	±30	V
Drain Current-Continuous(T_C = 25℃)	I_D	10	W
Pulsed Drain Current[2]	I_{DM}	40	A
Single Pulse Avalanche Energy[3]	E_{AS}	583	mJ
Total Power Dissipation[4] (T_C = 25℃)	P_D	227	W
Thermal Resistance Junction- Case[1]	$R_{\theta JC}$	0.55	℃/ W
Storage Temperature Range	T_{STG}	-55~ +150	℃
Operating Junction Temperature Range	$T_{J,}$	-55~ +150	℃

Electrical characteristics

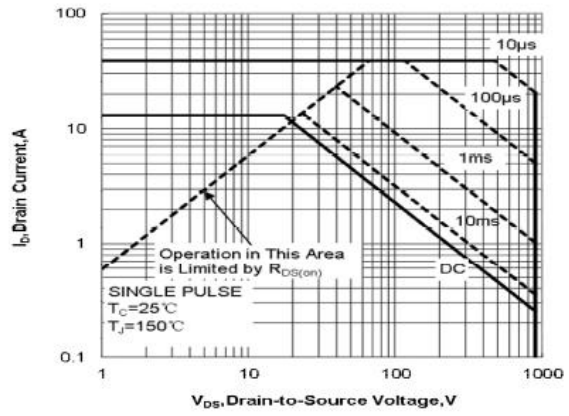
(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} = 0V, I_D =250μA	900			V
Bvdss Temperature Coefficient	ΔBVDSS/ΔTJ	I_D=250uA, Reference25℃		1		V/℃
Drain-Source Leakage Current	I_{DSS}	V_{DS} =900V,V_{GS} = 0V , T_J=25℃			25	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±30V , V_{DS}=0V			±100	uA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	3	4	5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =46A		0.75	1	Ω
Dynamic characteristics[4]						
Input Capacitance	C_{iss}	V_{DS}=25V,V_{GS}=0V, f=1MHz		5023		pF
Output Capacitance	C_{oss}			298		
Reverse Transfer Capacitance	C_{rss}			3		
Switching Characteristics						
Total Gate Charge(4.5V)	Q_g	V_{DS}=720V, V_{GS}=10V, I_D=10A		85		nC
Gate-Source Charge	Q_{gS}			25		
Gate-Drain Charge	Q_{gd}			30		
Turn-On Delay Time	$T_{d(on)}$	V_{DD}=450V, V_{GS}=10V, R_G=25Ω, I_D=40A		52		nS
Rise Time	T_r			57		
Turn-Off Delay Time	$T_{d(off)}$			90		
Fall Time	T_f			41		

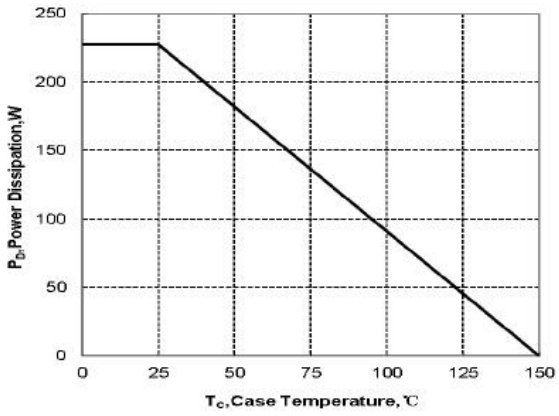
Note :

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 ≦ 300us , duty cycle ≦ 2%
3. The EAS data shows Max. rating . The test condition is L=10mH

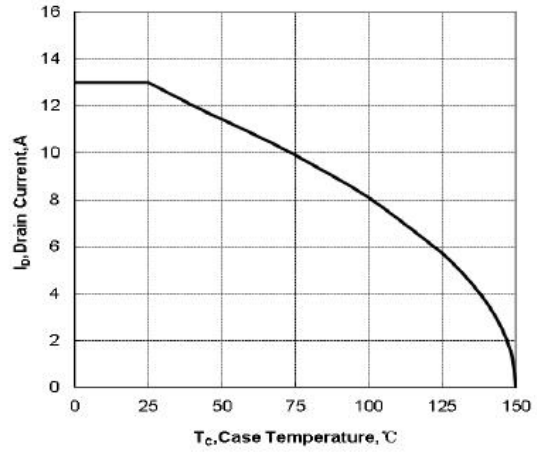
Typical Characteristics



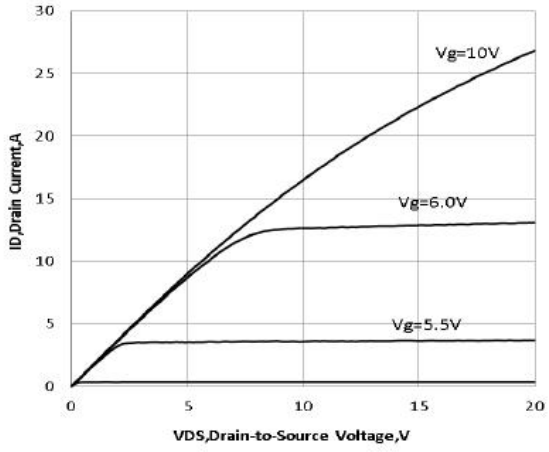
Maximum Forward Bias Safe Operating Area



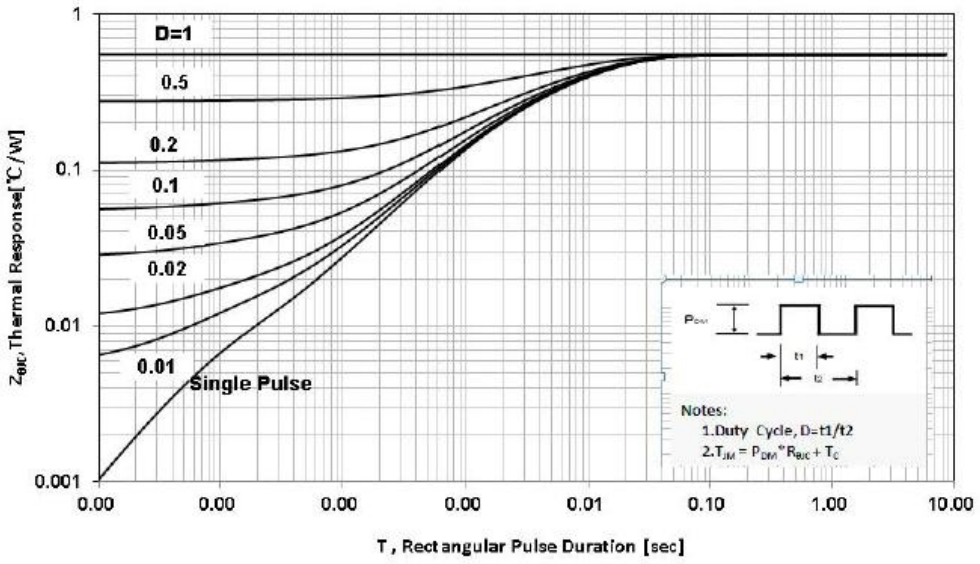
Maximum Power dissipation vs Case Temperature



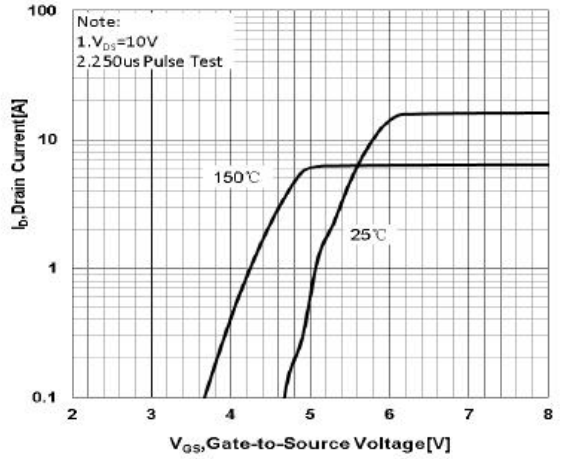
Maximum Continuous Drain Current vs Case Temperature



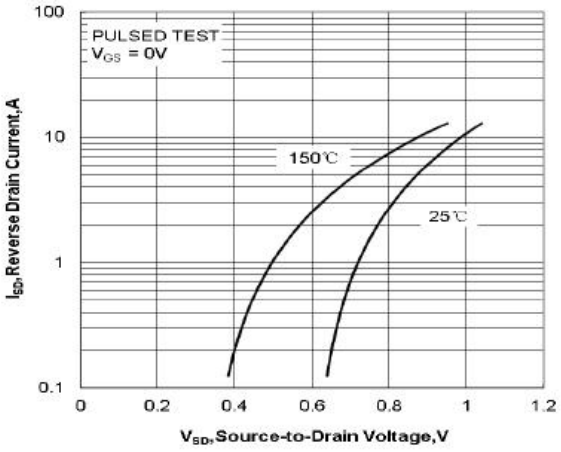
Typical Output Characteristics



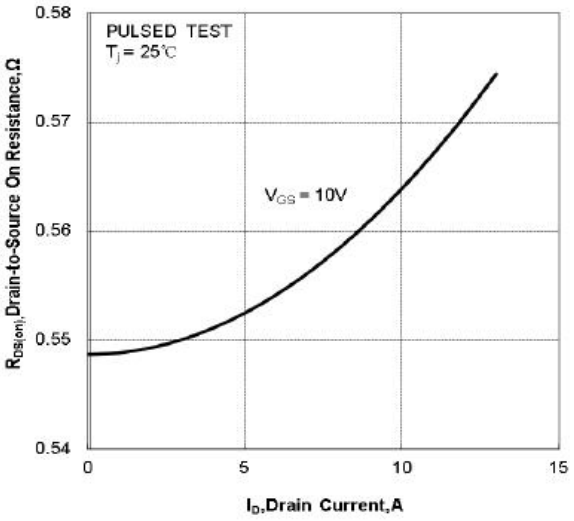
Maximum Effective Thermal Impedance , Junction to Case



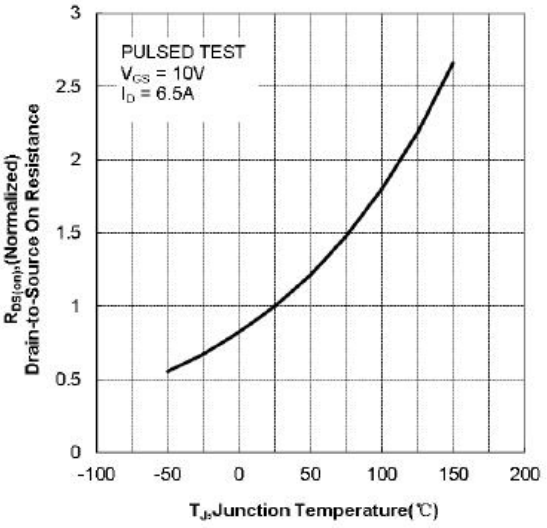
Typical Transfer Characteristics



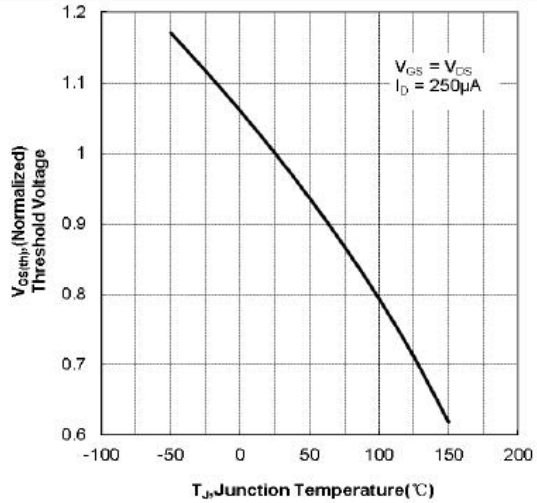
Typical Body Diode Transfer Characteristics



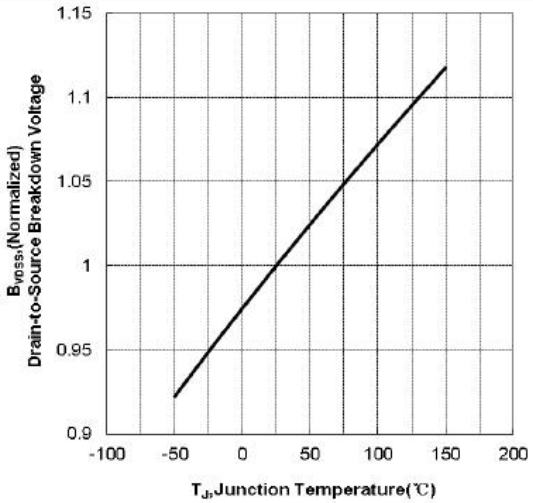
Typical Drain to Source ON Resistance
vs Drain Current



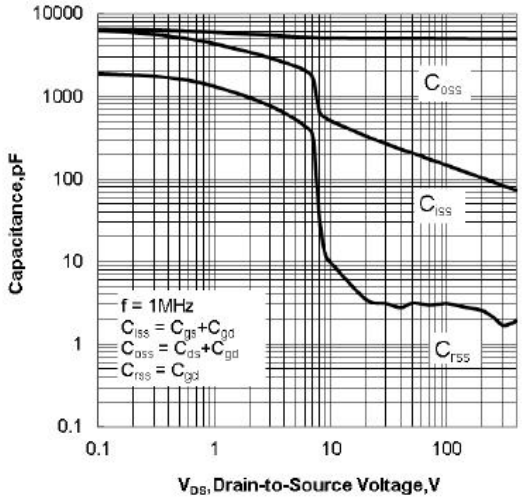
Typical Drian to Source on Resistance
vs Junction Temperature



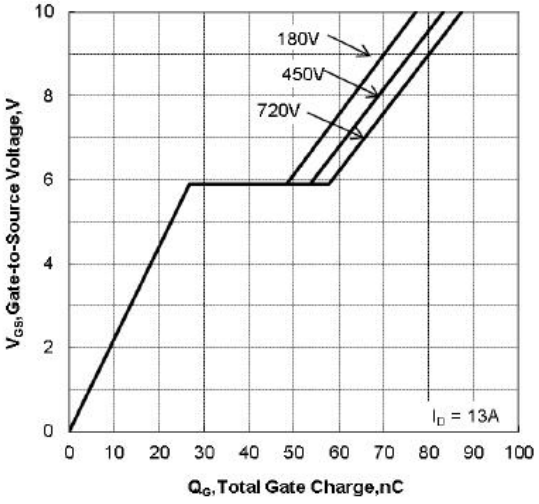
Typical Theshold Voltage vs Junction Temperature



Typical Breakdown Voltage vs Junction Temperature

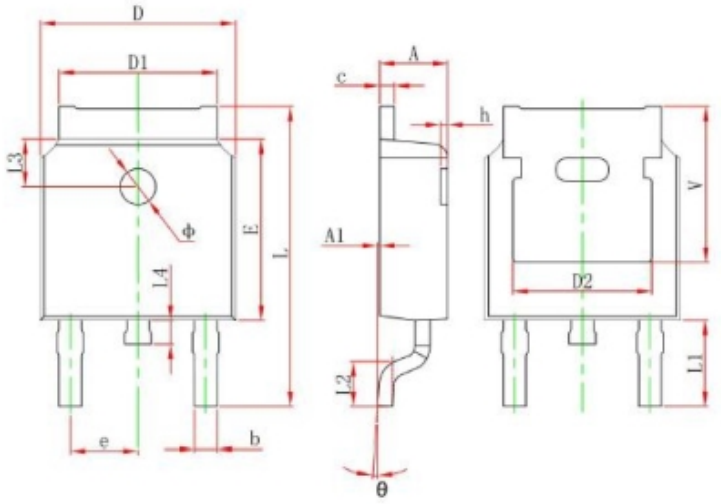


Typical Capacitance vs Drain to Source Voltage



Typical Gate Charge vs Gate to Source Voltage

TO-252-2L 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.	