/ Descriptions

TO-252 N MOS
N-CHANNEL MOSFET in a TO-252 Plastic Package.

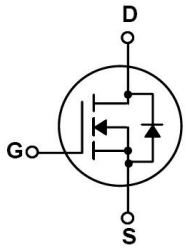
/ Features

V_{DS}=500V I_D=7A
$R_{DS(ON)}$@10V ≤ 1.5 (Typ. 1.2)
Fast Switching.
HF Product.

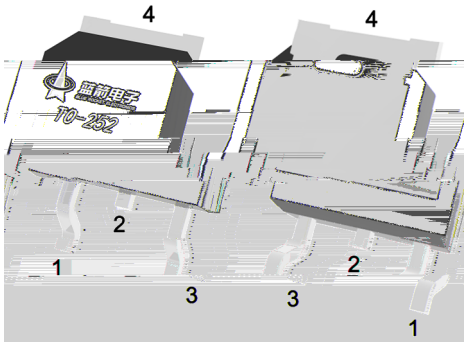
/ Applications

These devices are well suited for power switch circuit of adaptor and charger, intergrate fast recovery diode.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S PIN 4 D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current	I_D(Tc=25)	7	A
Drain Current - Pulsed	I_{DM}	28	A
Gate-Source Voltage	V_{GS}	±30	V
Single Pulsed Avalanche Energy	E_{AS}	392	mJ
Avalanche Current	I_{AS}	8.4	A
Power Dissipation	P_D(Tc=25)	50	W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	
Junction to Ambient	$R_{\theta JA}$	110	/W
Junction to Case	$R_{\theta JC}$	2.5	/W

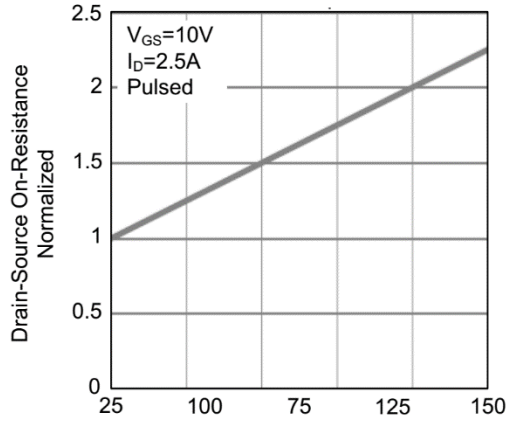
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250 A	500	554		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V V_{GS}=0V			1	A
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±30V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250 A	2.0	2.9	4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=3.0A		1.2	1.5	
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS} = 0 V I_S = 1.0A			1.4	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		570		pF
Output Capacitance	C_{oss}			62		
Reverse Transfer Capacitance	C_{rss}			5.5		
Total Gate Charge	Q_G	V_{DS}= 400V I_D=7.0A V_{GS}= 10V		30		nC
Gate-Source Charge	Q_{GS}			12.5		
Gate-Drain Charge	Q_{GD}			5.4		

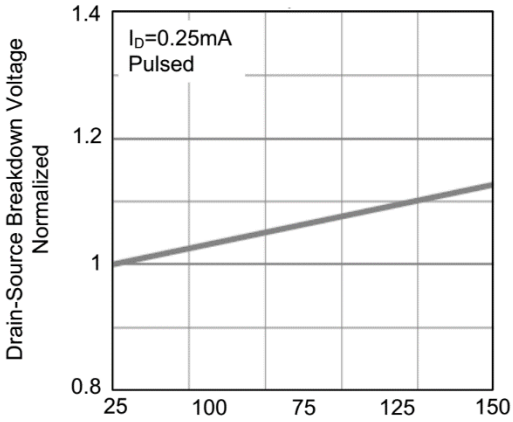
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=100V I_D=7.0A V_{GS}=10V R_G=25		11		ns
Turn-On Rise Time	t_r			17.5		
Turn-Off Delay Time	$t_{d(off)}$			53		
Turn-Off Fall Time	t_f			32		
Maximum Continuous Drain-Source Diode Forward Current	I_S				7	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				28	A
Reverse Recovery Time	trr	V_{GS}=0V I_S=7.0A dI_F/dt=100 A/ s		90		ns
Reverse Recovery Charge	Qrr			250		nC

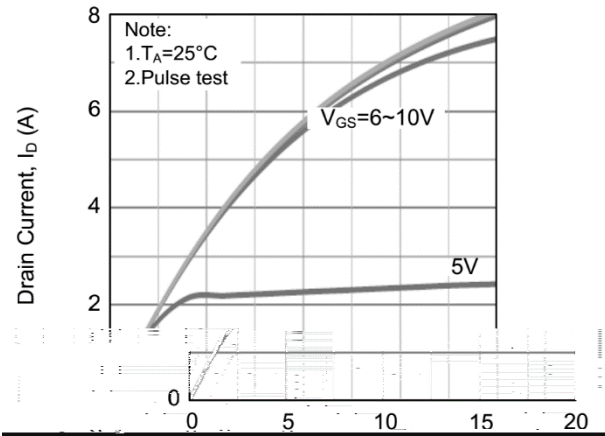
/ Electrical Characteristic Curve

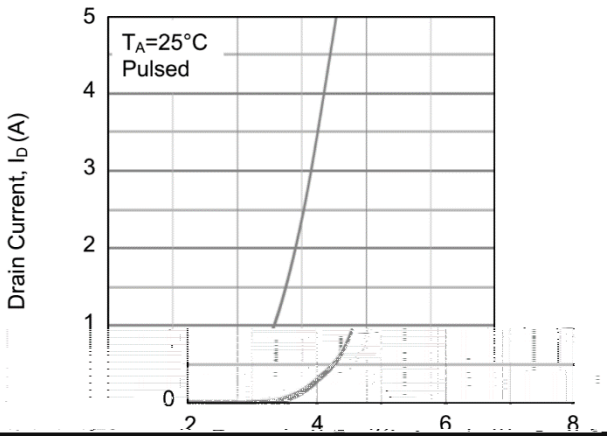


1. Drain-Source On-Resistance vs. Junction Temperature



2. Breakdown Voltage vs. Junction Temperature



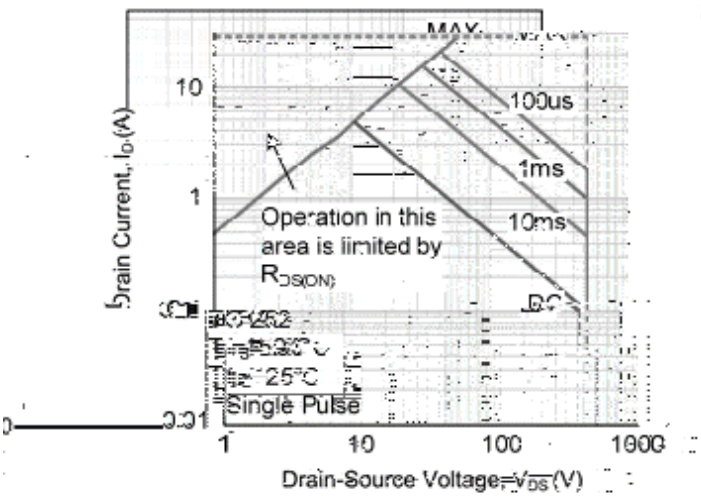


Drain-Source Voltage, V_{DS} (V)

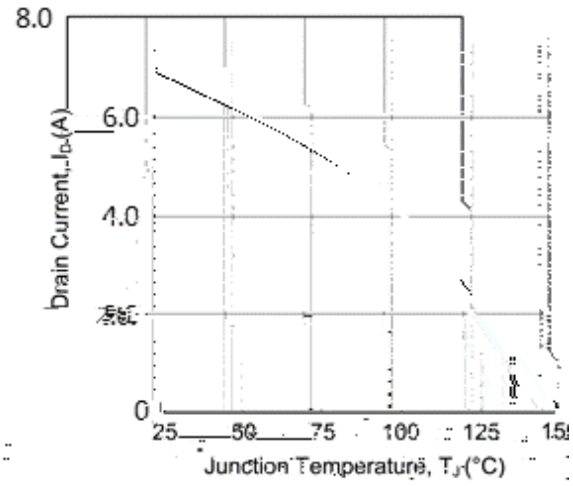
Current vs. Gate-Source Voltage

3. Drain Current vs. Drain-Source Voltage

4. Drain-

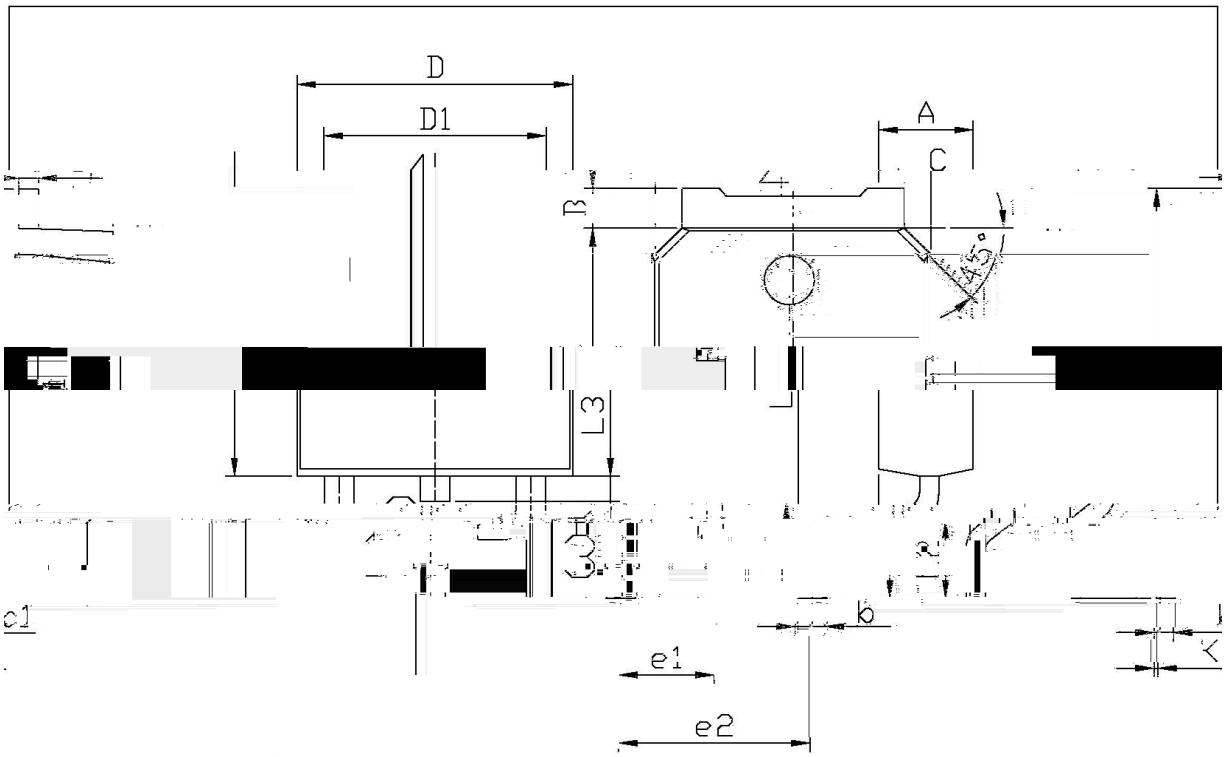


5. Safe Operating Area



6. Drain Current vs. Junction Temperature

/ Package Dimensions

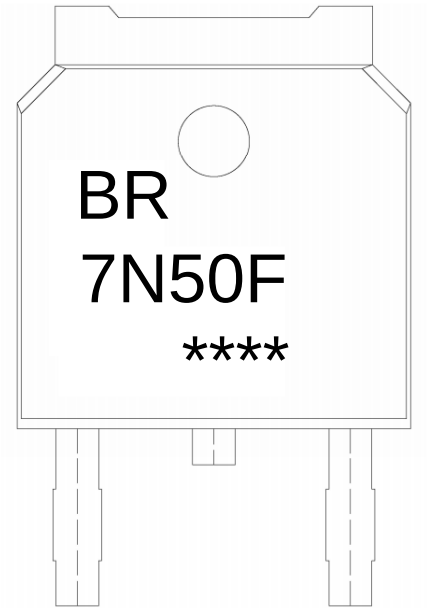


单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
95	6.25	A	2.20	2.40	E 5
.24	2.34	B	0.95	1.25	e1 2
[illegible]	1.73	[illegible]	[illegible]	0.00	[illegible]
9.85	10.35	b1	0.45	0.55	L1
[illegible]	0.45	0.55	[illegible]	70	[illegible]
6.75	L3	0.60	0.90	D	6.45
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TO-252

/ Marking Instructions



BR

7N50F

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Note:

BR:	Company Code
7N50F:	Product Type Code
****:	Lot No. Code, code change with Lot No

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)

		Note:
1	150 180 60 90sec;	1.Preheating:150~180 , Time:60~90sec.
2	245±5 5±0.5sec;	2.Peak Temp.:245±5 , Duration:5±0.5sec.
3	2 10 /sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5	10±1 sec.	Temp.:260±5℃	Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box