

/ Descriptions

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

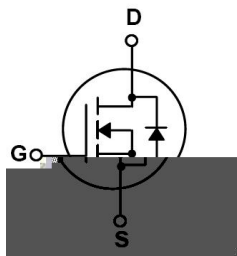
/ Features

Low gate charge, low crss, fast switching.

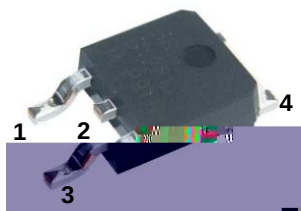
/ Applications

These devices are well suited for power switch circuit of adaptor and charger.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S PIN 4 D

/ h_{FE} Classifications & Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	700	V
Drain Current	$I_D(T_c=25)$	4.0	A
Drain Current	$I_D(T_c=100)$	3.2	A
Drain Current - Pulsed	I_{DM}	16	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	150	mJ
Power Dissipation	P_D	70	W
Junction Temperature Range	T_j	150	
Storage Temperature Range	T_{stg}	-55~150	
Junction-to-Case	R_{JC}	1.79	/W
Junction-to-Ambient	R_{JA}	62.5	/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	700			V
Breakdown Voltage Temperature Coefficient	BV_{DSS} / T_j	$I_D=250\mu A$ Referenced to 25		0.6		V/
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}$ $I_D=250$ A	2.0		4.0	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=700V$ $V_{GS}=0V$ $T_j=25$			10	A
		$V_{DS}=560V$ $V_{GS}=0V$ $T_j=125$			100	A
Forward Transconductance	g_{FS}	$V_{DS}=15V$ $I_D=2.0A$		3.5		S
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$			± 10	μA
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=2.0A$		2.5	2.8	
Input Capacitance	C_{iss}	$V_{GS}=0V$ $V_{DS}=25V$ $V_F=1.0MHz$		520		pF
Turn-Off Delay Time	$t_{d(off)}$	$V_{DD}=350V$ $I_D=4.0A$ $R_G=25$		45		ns

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	$I_D=4.0A$ $V_{DS}=350V$ $V_{GS}=10V$		15		nC
Gate-to-Source Charge	Q_{gs}			3		nC
Gate-to-Drain Charge	Q_{gd}			6		nC
Continuous Diode Forward Current	I_S				4.0	A
Diode Forward Voltage	V_{SD}	$I_S=4.0A$ $V_{GS}=0V$ $T_j=25$			1.4	V
Reverse Recovery Time	t_{rr}	$I_f=4.0A$ $T_j=25$ $di/dt=100A/s$		198		nS
Reverse Recovery Charge	Q_{rr}			770		uC

(Notes):

Repetitive rating: Pulse width limited by maximum junction temperature

$T_a=25$, $V_{DD}=50V$, $L=30mH$, $R_G=25\Omega$, $I_{AS}=4.0A$

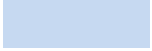
Starting $T_j=25$, $V_{DD}=50V$, $L=30mH$, $R_G=25$, $I_{AS}=4.0A$

$\leq 300\mu s$ ≤ 2

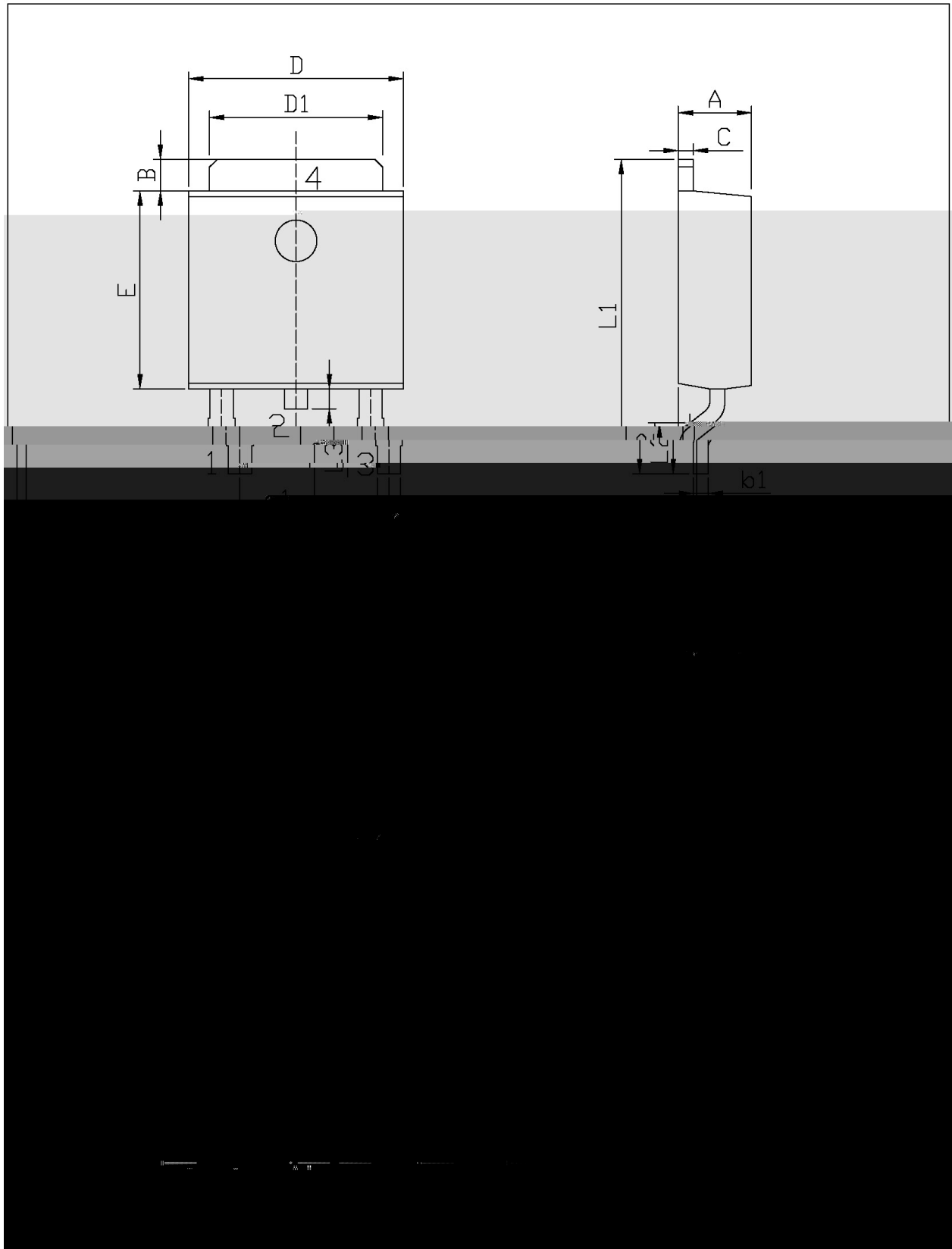
Pulse Test: Pulse width 300 μs , Duty cycle 2%

BRD4M

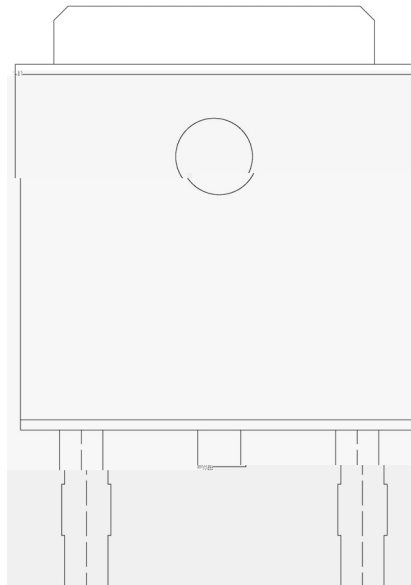
Rev.E May.



/ Package Dimensions



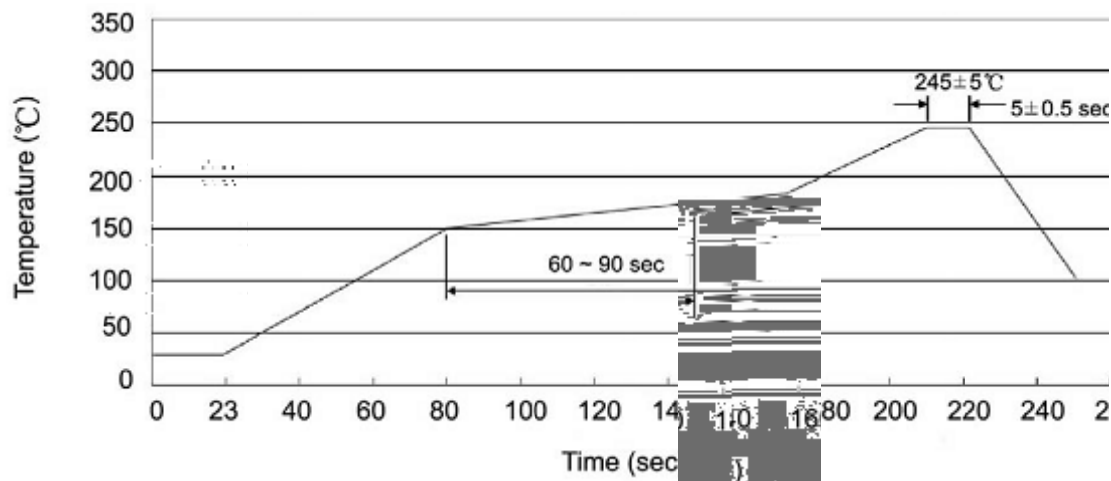
/ Marking Instructions



BR
4N70

Note:
BR:

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | |
|---|--------------|-------------|----------------------------------|
| 1 | 25 ~ 150 | 60 ~ 90sec; | 1.Preheating:25~150 , Time:60~90 |
| 2 | 245±5 | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5± |
| 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 封装形式	Units 包装数量					Dimension 包装尺寸 (mm)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱	盒		

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (mm)		
	只 套管	套管 盒	只 盒	盒 箱	只 箱	套管	盒	

/ Notices