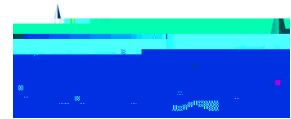


BRI70R1K2

Rev.A Jul.-2016



DATA SHEET

/ Descriptions

TO-251 N MOS

Super Junction N-Channel Power MOSFET in a TO-251 Plastic Package.

/ Features

Ultra Low $R_{DS(ON)} = 1.2 \text{ } @ V_{GS} = 10V$, Ultra Low Gate Charge, $Q_g = 8.9nC$ typ, Fast switching capability

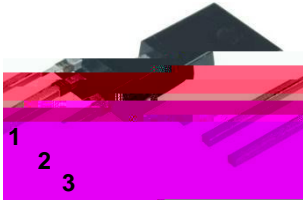
/ Applications

TV Power, High Performance Charger/Adapter, LED Lighting Power.

/ Equivalent Circuit



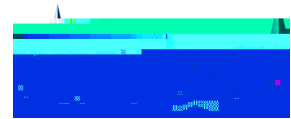
/ Pinning



PIN1 G PIN 2 D PIN 3 S

/ h_{FE} Classifications & Marking

See Marking Instructions.

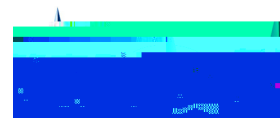


Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	730	V
Gate-Source Voltage		V_{GSS}	± 30	V
Continuous Drain Current	$T_C=25^\circ C$	I_D	4.2	A
	$T_C=125^\circ C$		1.9	A
Pulsed Drain Current (Note 2)		I_{DM}	11.3	A
Avalanche Energy, Single Pulse (Note 3)		E_{AS}	125	mJ
Avalanche Energy, Repetitive (Note 2)		E_{AR}	0.2	mJ
Avalanche Current, Repetitive (Note 2)		I_{AR}	2.0	A
Continuous Diode Forward Current		I_S	4.2	A
Diode Pulse Current		$I_{S,PULSE}$	11.3	A
Operating Junction Temperature		T_J	150	
Storage Temperature		T_{STG}	-65 to 150	
Lead Temperature (Soldering, 10 sec)		T_{LEAD}	300	

Note:

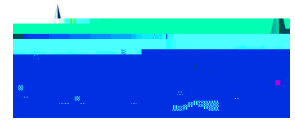
1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. Repetitive Rating: Pulse width limited by maximum junction temperature
3. $I_{AS} = 2A$, $V_{DD} = 60V$, $R_G = 25 \Omega$, Starting $T_J = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	700			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=700V$ $V_{GS}=0V$			1	μA

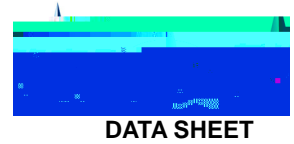


/ Electrical Characteristics(Ta=25)

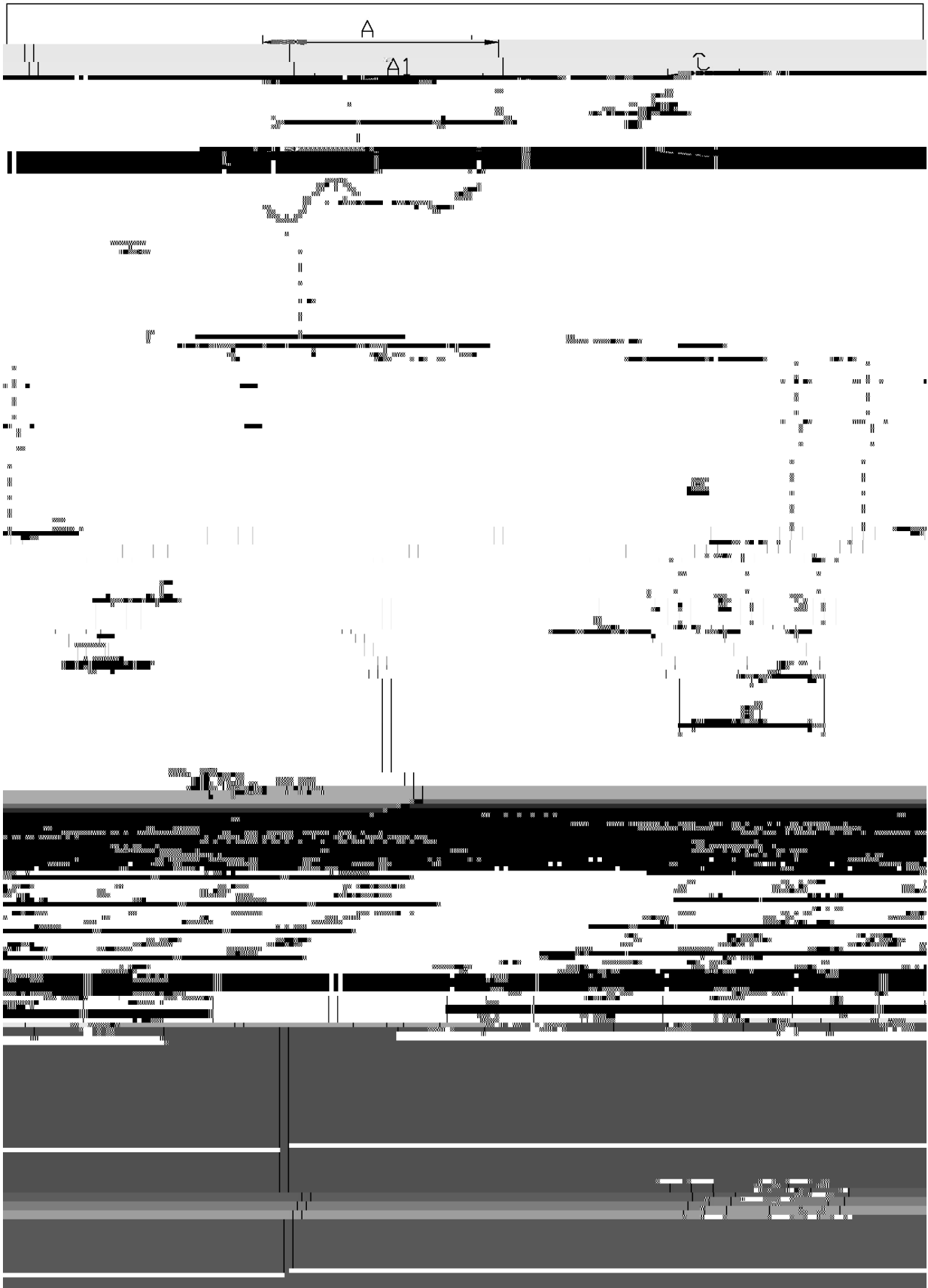
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=400V$ $I_D=2.0A$ $R_G=10$ $V_{GS}=10V$		8		ns
Rise Time	t_r			12		
Turn-off Delay Time	$t_{d(off)}$			10		
Fall Time	t_f			18		
Gate to Source Charge	Q_{gs}	$V_{DD}=480V$ $I_D=2.0A$ $V_{GS}=0$ to 10V		2.32		nC
Gate to Drain Charge	Q_{gd}			4.7		
Gate Charge Total	Q_g			8.9		
Gate Plateau Voltage	$V_{plateau}$			5.8		V
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_{SD}=2A$		0.81	1.1	V
Reverse Recovery Time	t_{rr}	$V_R=100V$ $I_F=2.0A$ $dI_F/dt=98.4A/us$		155. 8		ns
Reverse Recovery Charge	Q_{rr}			0.89		uC
Peak Reverse Recovery Current	I_{rrm}			11.3		A



/ Electrical Characteristic Curve



/ Package Dimensions





/ Marking Instructions



BR

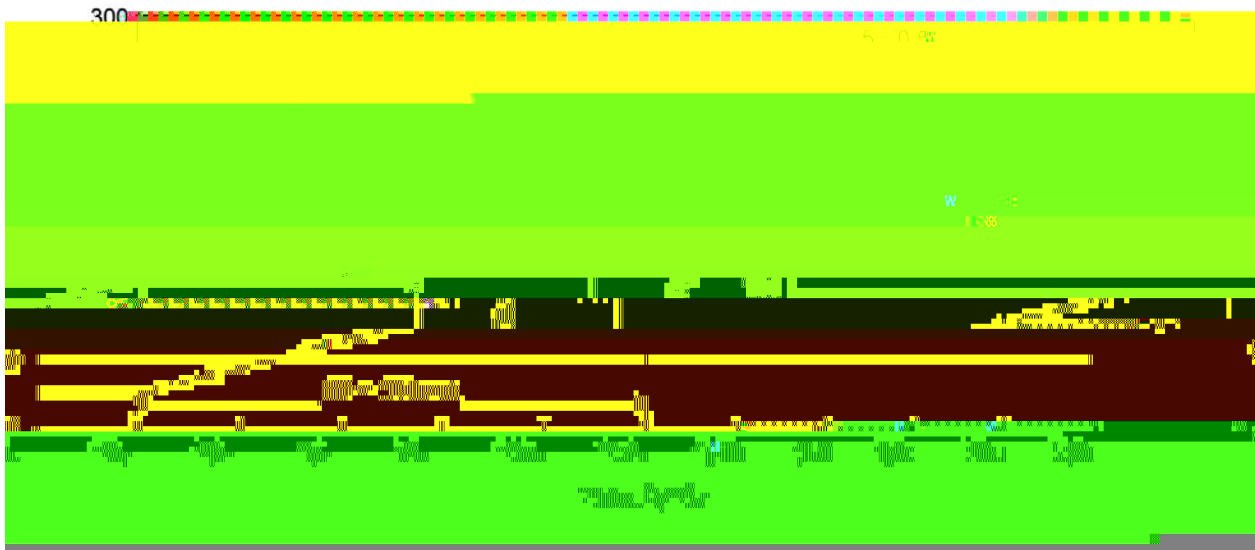
70R1K2 (B)

Note:

BR: Company Code

70R1K2: Product Type.

****: Lot No. Code, code change with Lot No.



- | | | | | | | |
|---|--------|-----|------------|--------|---|--------------------------------------|
| 1 | 25 | 150 | 60 | 90sec; | Note: | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255..5 | | 5..0.5sec; | | 2.Peak Temp.:255..5 , Duration:5..0.5sec. | |
| 3 | | 2 | 10 | /sec. | 3. | |