描述 / Descriptions

TO-220 N MOS N-CHANNEL MOSFET in a TO-220 Plastic Package.

特征 / Features

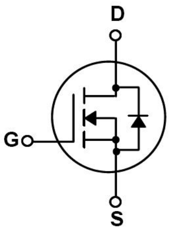
Low gate charge, Low Crss , Fast switching.

用途 / Applications

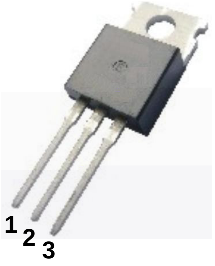
PFC

These devices are well suited for high efficient switched mode power supplies, active power factor correction, electronic lamp ballast based on half bridge topology.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 G PIN 2 D PIN 3 S

放大及印章代码 / h_{FE} Classifications & Marking

See Marking Instructions.

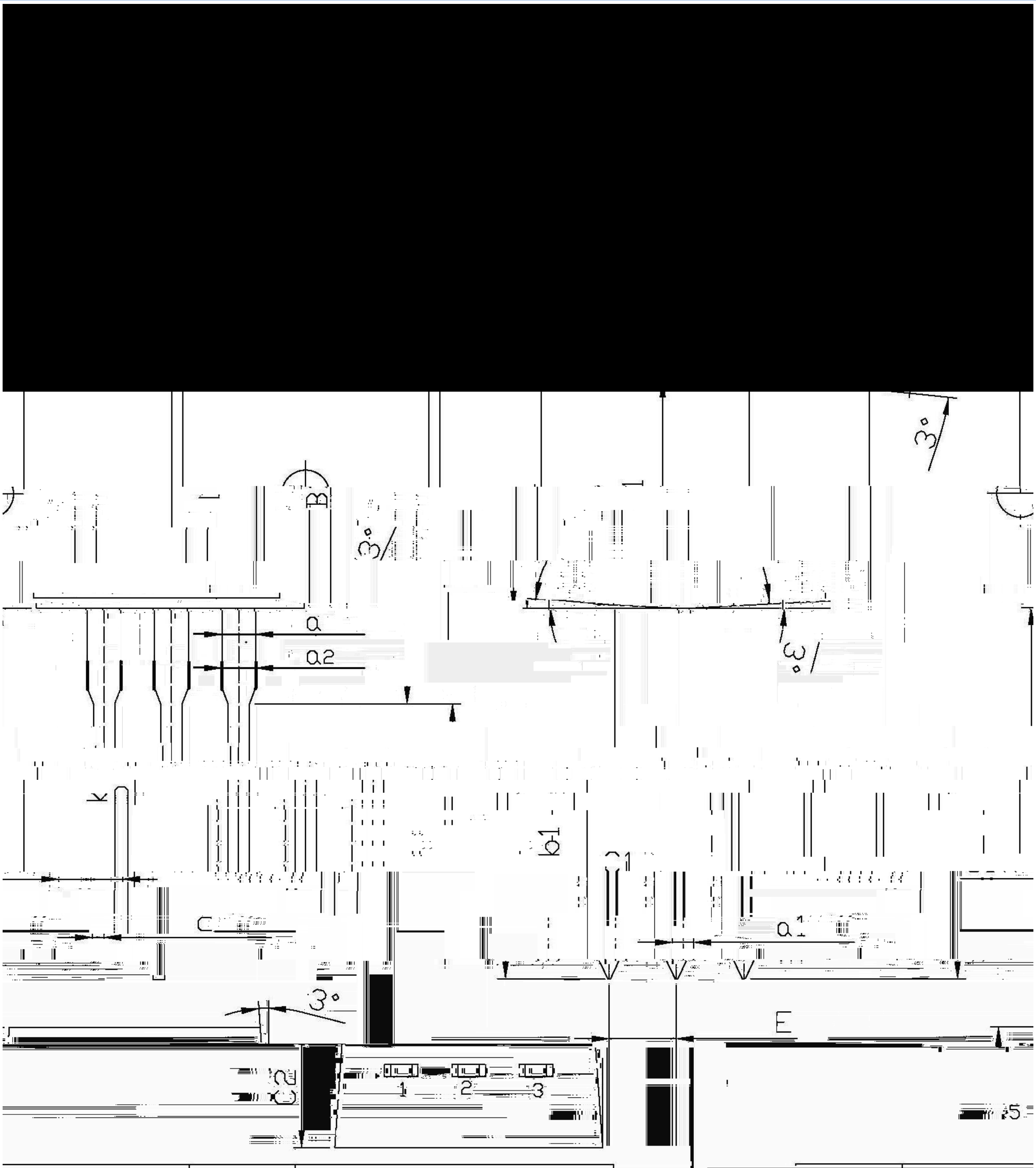
极限参数 / Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	600	V
Drain Current	I_D(Tc=25℃)	12	A
	I_D(Tc=100℃)	7.4	A
Drain Current - Pulsed	I_{DM}	48	A
Gate-Source Voltage	V_{GSS}	±30	V
Single Pulsed Avalanche Energy	E_{AS}	870	mJ
Repetitive Avalanche Energy	E_{AR}	22.5	mJ
Avalanche Current	I_{AR}	12	A
Power Dissipation	P_D(Tc=25℃)	225	W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	

电性能参数 / Electrical Characteristics(Ta=25℃)

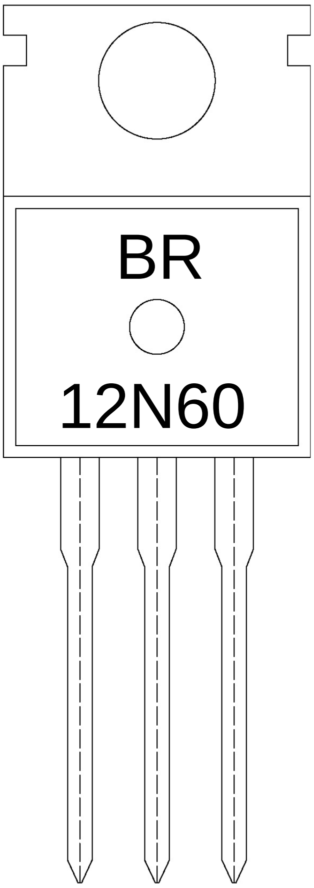
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	600			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=600V V_{GS}=0V			1	μA
		V_{DS}=480V T_C=125℃			10	μA
Gate-Body Leakage Current, Forward	I_{GSS}	V_{GS}=±30V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2		4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=6.0A		0.53	0.65	Ω
Forward Transconductance	g_{FS}	V_{DS}=40V I_D=6.0A		13		S
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=12A			1.4	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		1760	2290	pF
Output Capacitance	C_{oss}			182	235	pF
Reverse Transfer Capacitance	C_{rss}			21	28	pF
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=300V I_D=12A R_G=25Ω		30	70	ns
Turn-On Rise Time	t_r			85	180	ns
Turn-Off Delay Time	$t_{d(off)}$			140	280	ns
Turn-Off Fall Time	t_f			90	190	ns

外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters Min	Max	Symbol	Dimensions In Millimeters Min	Max
A	9.8	10.2	C	1.2	1.4
[illegible]	3.56	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	15.7	16.1	B1	9.02	[illegible]
b	12.6	13.6	C1	2.2	[illegible]
b1	9.6	10.6	a1	0.7	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.32
[illegible]	[illegible]	[illegible]	E	2.34	2.74
			a2	1.25	1.45

印章说明 / Marking Instructions



BR

12N60

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Note:

BR: Company Code

12N60: Product Type.

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

波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)

Note:

1 25 150 60 90sec;	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. Cooling Speed: 2~10 /sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

270±5 10±1 sec. Temp.:270±5 Time:10±1 sec

包装规格 / Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	只 袋	袋 盒	只 盒	盒 箱	只 箱	袋	盒	箱

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	只 套管	套管 盒	只 盒	盒 箱	只 箱	套管	盒	箱

使用说明 / Notices