

描述 / Descriptions

TO-92 塑封封装 N 沟道 MOS 场效应管。
N-CHANNEL MOSFET in a TO-92 Plastic Package.

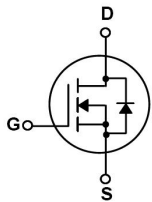
特征 / Features

低栅电荷,低反馈电容,开关速度快。
Low gate charge, low crss, fast switching.

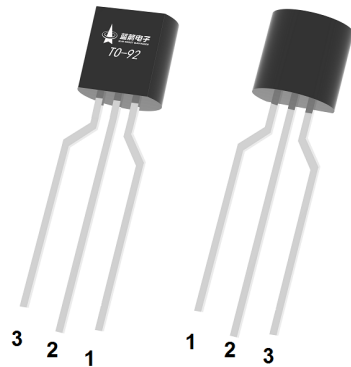
用途 / Applications

用于高功率 DC/DC 转换和功率开关。
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1 : S

PIN 2 : D

PIN 3 : G

印章代码 / Marking

见印章说明。
See Marking Instructions.

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

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V _{DSS}	600	V
Drain Current – Continuous	I _D (Tc=25°C)	2.0	A
Drain Current - Pulsed	I _{DM}	8.0	A
Gate-Source Voltage	V _{GSS}	±30	V
Single Pulsed Avalanche Energy	E _{AS}	120	mJ
Avalanche Current	I _{AR}	2.0	A
Power Dissipation	P _D	3.5	W
Junction Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C
Thermal Resistance Junction-case	R _{thJC}	35.7	°C/W
Thermal Resistance Junction-ambient	R _{thJA}	200	°C/W

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

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 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			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	2.0		4.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V I _D =1.0A		4.0	5.0	Ω
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =2.0A			1.4	V
Input Capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V f=1.0MHz		278		pF
Output Capacitance	C _{oss}			20		pF
Reverse Transfer Capacitance	C _{rss}				5	pF
Turn-On Delay Time	t _{d(on)}		V _{DD} =300V I _D =2.0A R _G =25Ω		8.2	
Turn-On Rise Time	t _r			23.5		ns
Turn-Off Delay Time	t _{d(off)}				26	ns
Turn-Off Fall Time	t _f				27.5	ns

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

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Total Gate Charge	Qg	I _D = 2.0A, V _{DS} = 480V V _{GS} = 10V		6.6		nC
Gate-to-Source Charge	Qgs			1.4		nC
Gate-to-Drain Charge	Qgd			2.0		nC
Continuous Diode Forward Current	I _s				2.0	A
Reverse Recovery Time	trr	T _j =25°C, I _f =2.0A di/dt=100A/μs		380		nS
Reverse Recovery Charge	Q _{rr}			0.9		uC

电参数曲线图 / Electrical Characteristic Curve

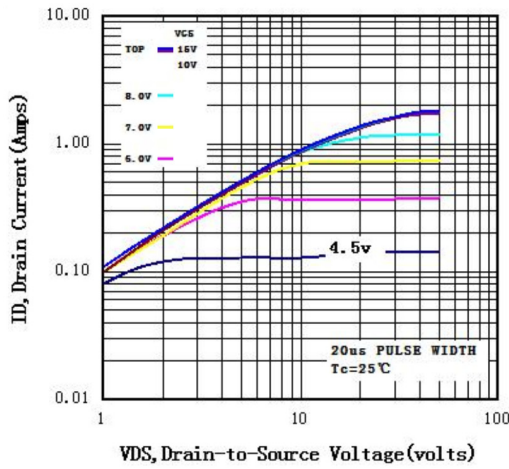


Fig1 Typical Output Characteristics, Tc=25°C

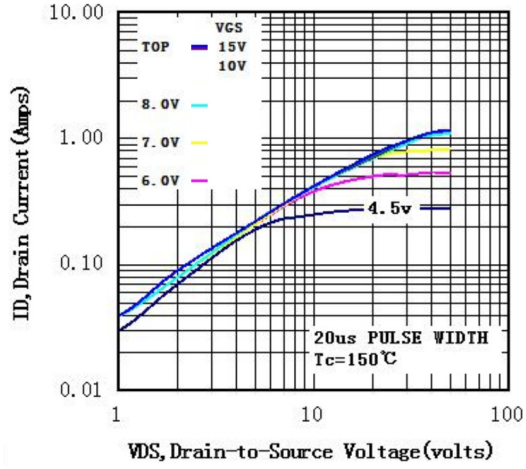


Fig2 Typical Output Characteristics, Tc=150°C

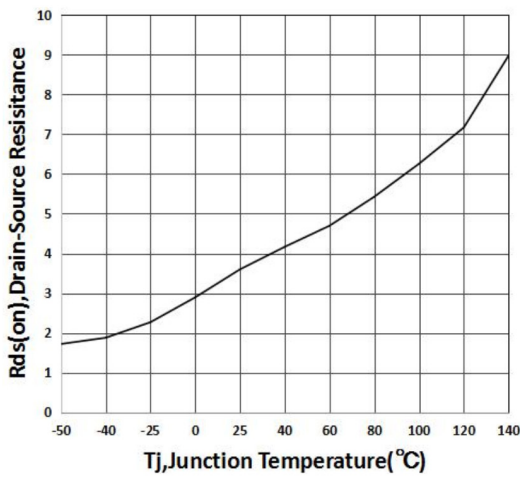


Fig3 Normalized Resistance Vs. Temperature

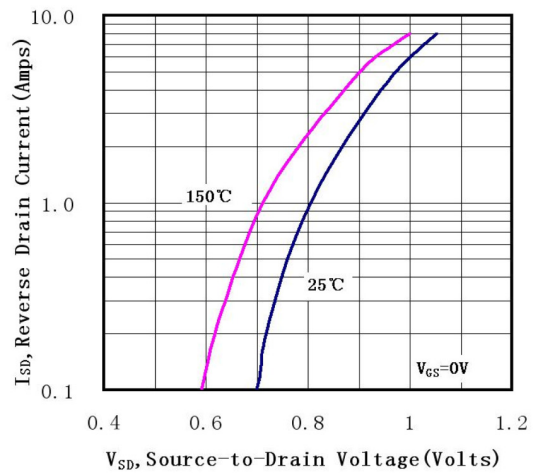


Fig4 Typical Source-Drain Diode Forward Voltage

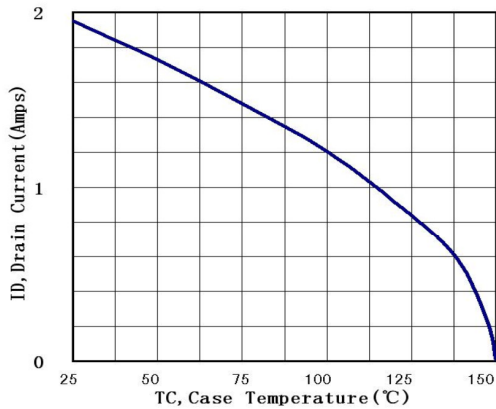


Fig5 Maximum Drain Current Vs. Case Temperature

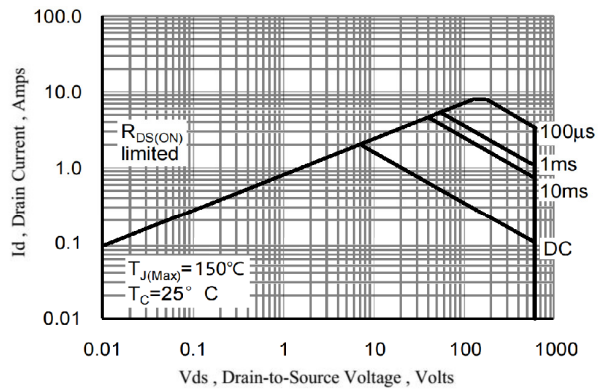
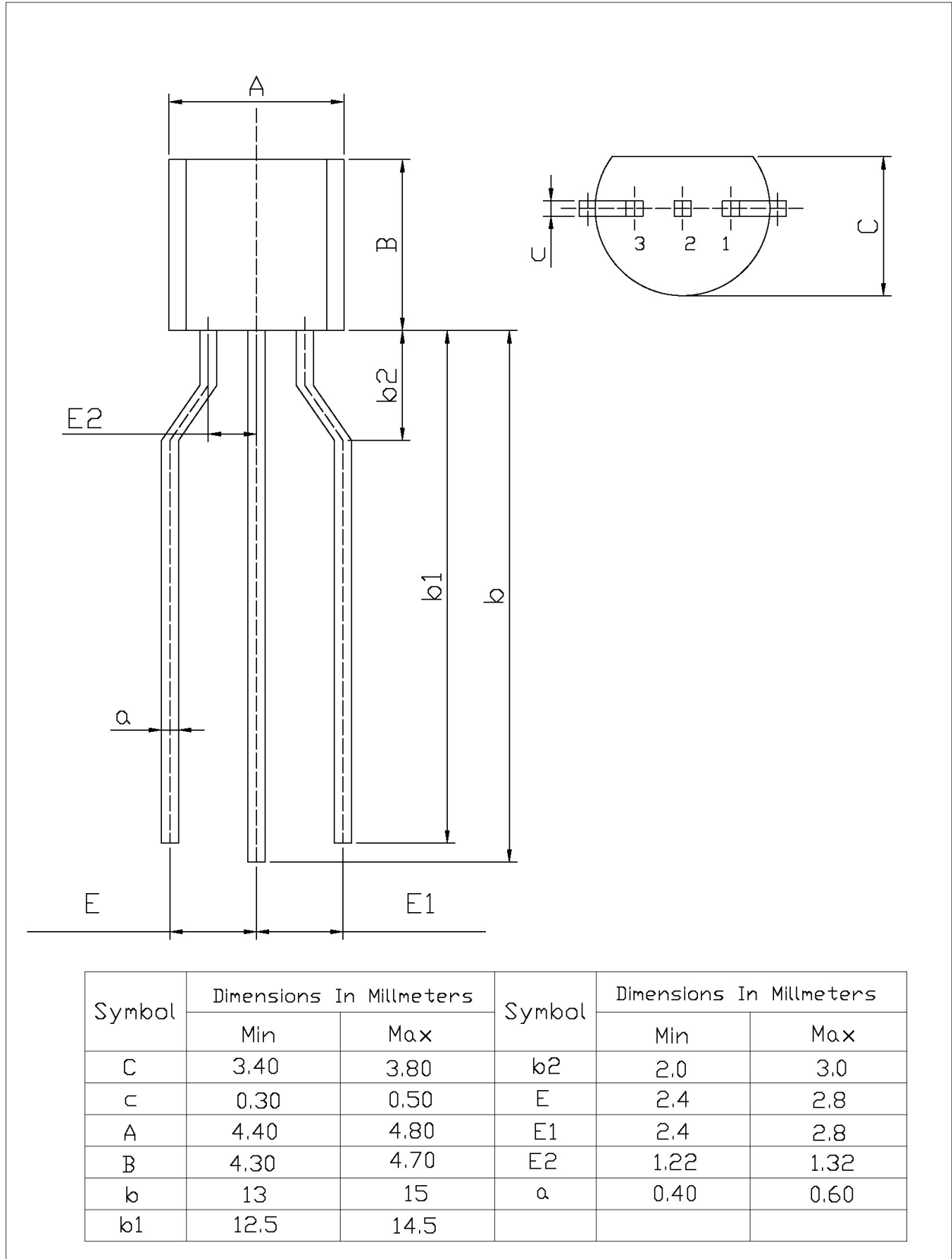


Fig6 Maximum Safe Operating Area

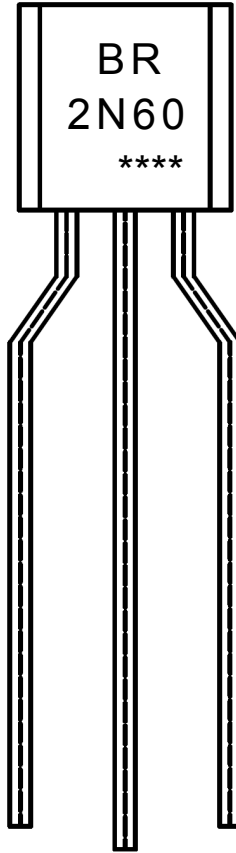
外形尺寸图 / Package Dimensions

T0-92

Unit:mm



印章说明 / Marking Instructions



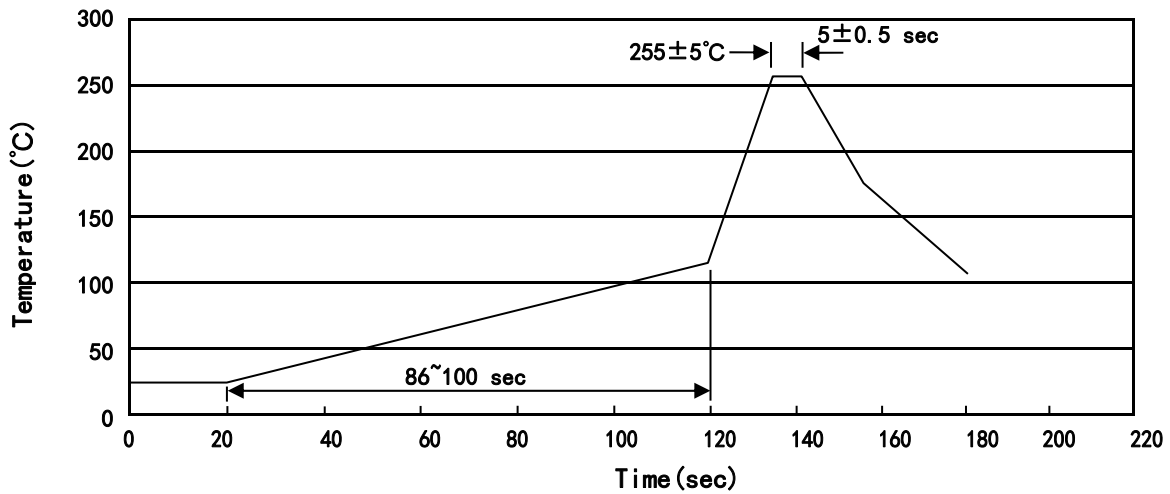
说明：

BR： 为公司代码
2N60： 为型号代码
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code
2N60: Product Type Code
****: 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)



说明：

- 1、预热温度 25~150°C，时间 60~90sec;
- 2、峰值温度 255±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

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

温度：270±5°C 时间：10±1 sec. Temp.:270±5°C Time:10±1 sec

包装规格 / Packaging SPEC.

散件包装 / BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱
TO-92	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195

编带包装 / AMMO

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)	
	Units/tape 只/纸带	Tape/Inner Box 纸带/盒	Rows/Inner Box 纸带层/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Inner Box 盒	Outer Box 箱
TO-92	3,000	1	120	10	30,000	328×230×42	480×346×235

使用说明 / Notices