

**描述 / Descriptions**

SOT-363 塑封封装双 N 沟道 MOS 场效应管。

Double N-CHANNEL MOSFET in a SOT-363 Plastic Package.

**特征 / Features**

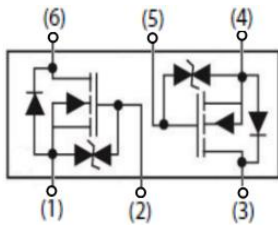
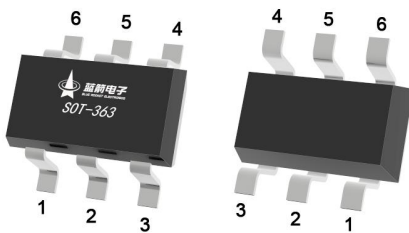
灵敏的控制级触发电流和很低的维持电流，内置静电保护二极管，符合 AEC-Q101 标准高可靠性要求，无卤产品。

Sensitive gate trigger current and Low Holding current.ESD protected diode, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

**用途 / Applications**

用作一般的开关和相位控制，满足汽车应用的严格要求。

Intended for use in general purpose switching and phase control applications, Meet the stringent requirements of automotive applications.

**内部等效电路 / Equivalent Circuit****引脚排列 / Pinning**

PIN1、4 : S

PIN 2、5 : G

PIN 3、6 : D

**印章代码 / Marking**

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	$V_{DSS}$	60	V
Drain-Gate Voltage	$V_{DGR}$	60	V
Maximum Drain Current - Continuous	$I_D$	320	mA
Maximum Drain Current - Pulsed	$I_{DM}$	1.5	A
Gate-Source Voltage - Continuous	$V_{GSS}$	$\pm 20$	V
Maximum Power Dissipation	$P_D$	350	mW
Storage Temperature Range	$T_{stg}$	-55~150	°C
Maximum Junction-to-Ambient(Note 1)	$R_{\theta JA}(\text{Steady State})$	417	°C/W
	$R_{\theta JA}(t \leq 5s)$	300	

Note 1) Surface-mounted on FR4 board using 1 sq in pad size with 1 oz Cu

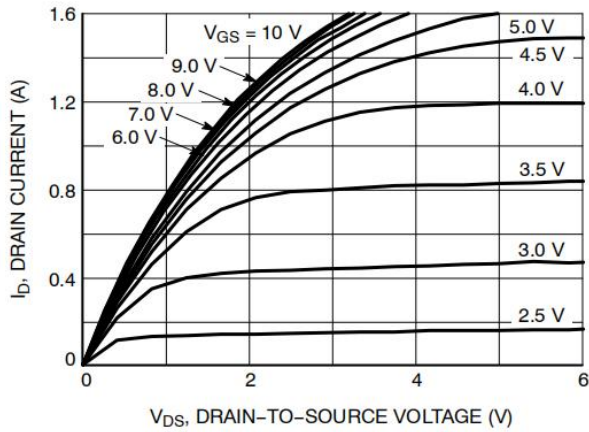
**电性能参数 / Electrical Characteristics(Ta=25°C)**

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	$V_{DSS}$	$V_{GS}=0$ $I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{GS}=0$ $V_{DS}=60V$			1.0	$\mu A$
Gate-Source Leakage	$I_{GSS}$	$V_{DS}=0V$ $V_{GS}=\pm 20V$			$\pm 10$	$\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=0.5A$			2.3	$\Omega$
	$R_{DS(on)(2)}$	$V_{GS}=5V$ $I_D=0.05A$		1.7	2.7	$\Omega$
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$ $I_S=250mA$			1.5	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.6	2.5	V
Forward Transconductance	$Y_{fs}$	$V_{DS}=10V$ $I_D=0.2A$	80			mS
Input Capacitance	$C_{iss}$	$V_{GS}=0V$ , $f=1MHz$ , $V_{DS}=20V$		25	50	pF
Output Capacitance	$C_{oss}$			11	25	
Reverse Transfer Capacitance	$C_{rss}$			2.5	5	
Total Gate Charge	$Q_{G(TOT)}$	$V_{GS}=4.5V$ , $V_{DS}=10V$ ; $I_D=200 mA$		0.7		nC
Threshold Gate Charge	$Q_{G(TH)}$			0.1		
Gate-to-Source Charge	$Q_{GS}$			0.3		
Gate-to-Drain Charge	$Q_{GD}$			0.1		

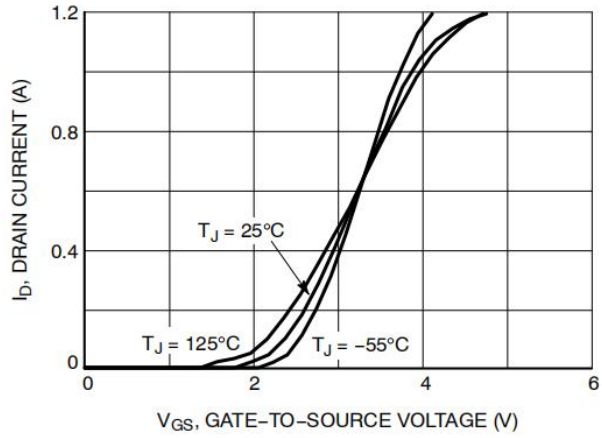
电性能参数 / Electrical Characteristics(Ta=25°C)

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
Turn-On Delay Time	$t_{d(ON)}$	VGS =10V, VDD=25V, ID=500mA, RG=25 $\Omega$		12.2		ns
Rise Time	$t_r$			9.0		
Turn-Off Delay Time	$t_{d(OFF)}$			55.8		
Fall Time	$t_f$			29		

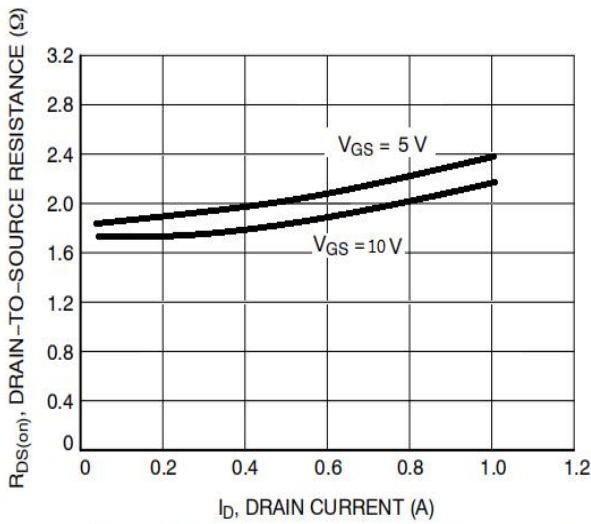
**电参数曲线图 / Electrical Characteristic Curve**



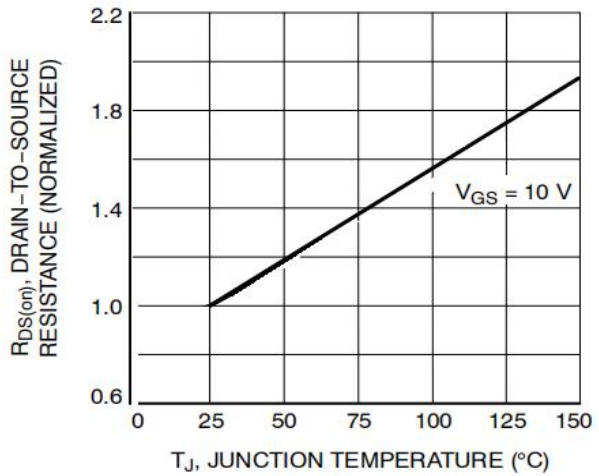
**Figure 1. On-Region Characteristics**



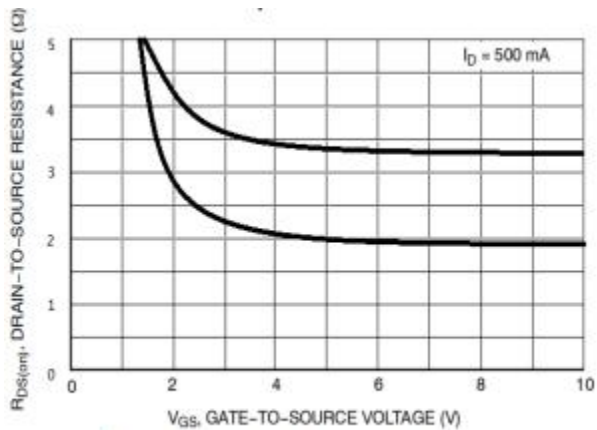
**Figure 2. Transfer Characteristics**



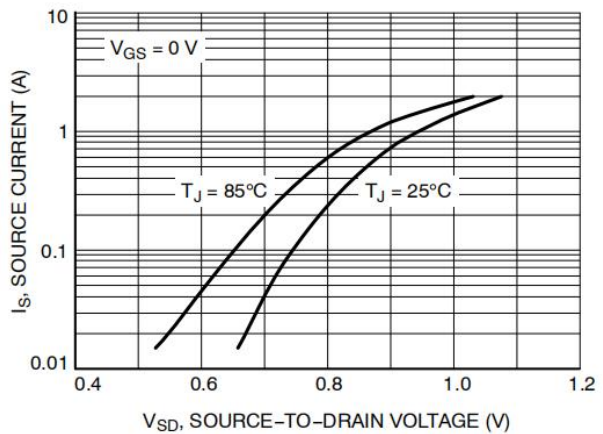
**Figure 3. On-Resistance vs. Drain Current and Temperature**



**Figure 4. On-Resistance Variation with Temperature**



**Figure 5. On-Resistance vs. Gate-to-Source Voltage**



**Figure 6. Diode Forward Voltage vs. Current**

电参数曲线图 / Electrical Characteristic Curve

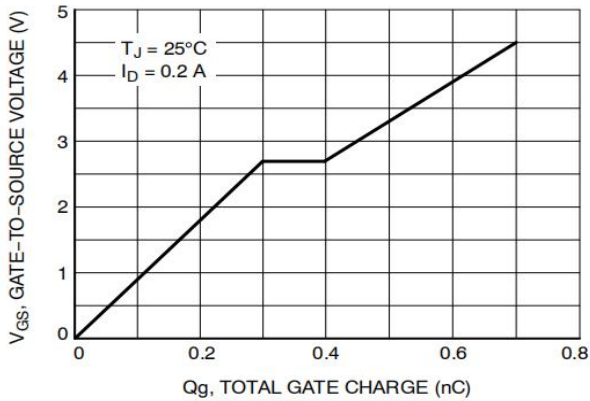


Figure 7. Gate-to-Source and Drain-to-Source Voltage vs. Total Charge

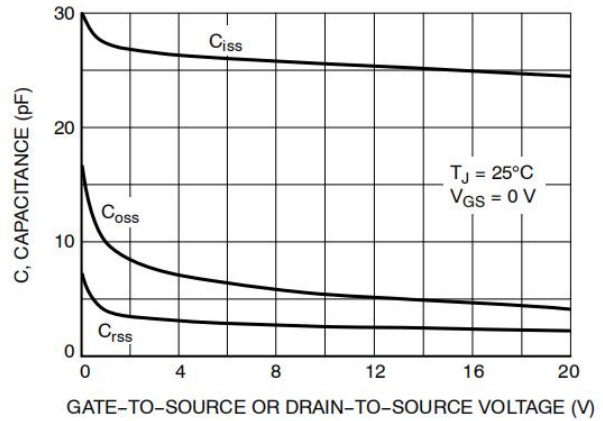


Figure 8. Capacitance Variation

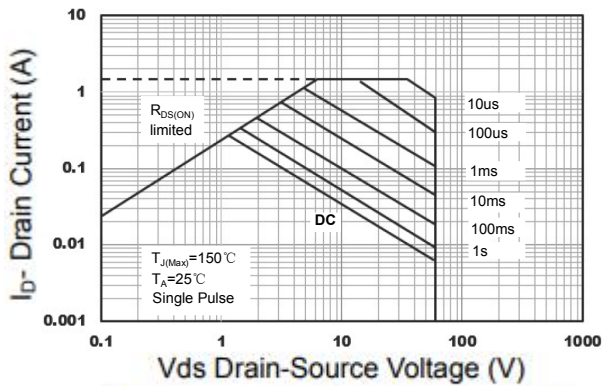


Figure 9 : Safe Operation Area

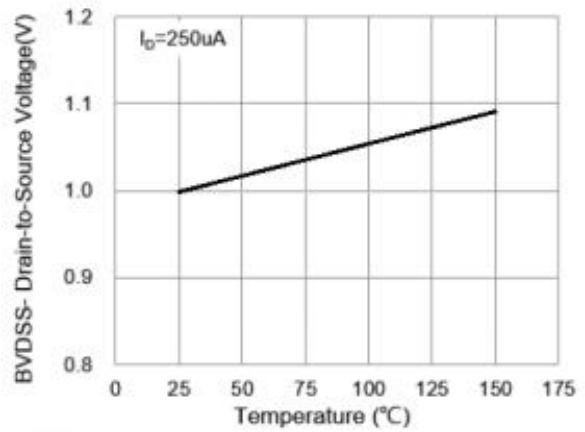


Figure 10 : Breakdown Voltage vs. Temperature

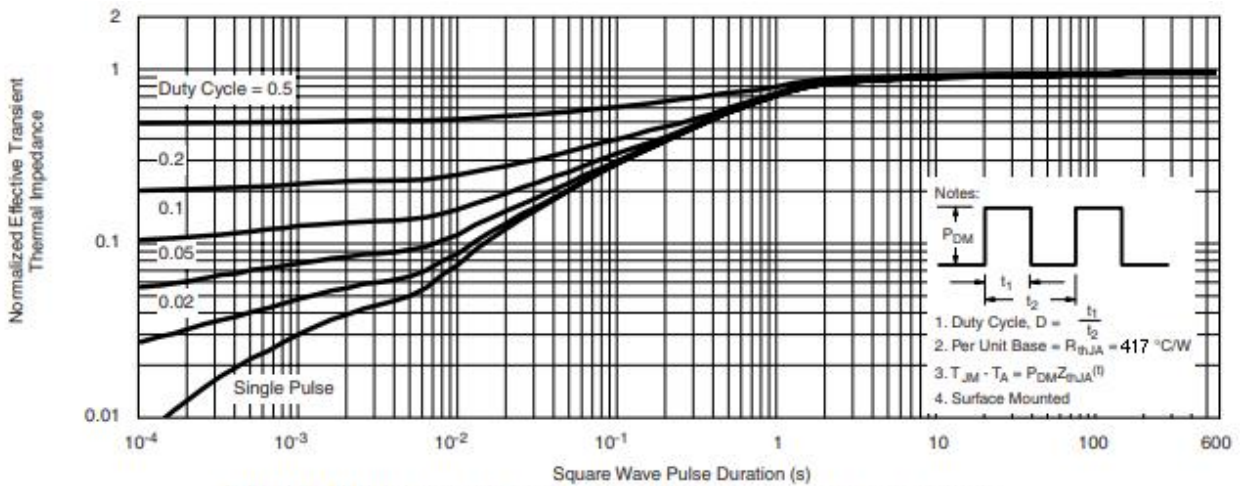
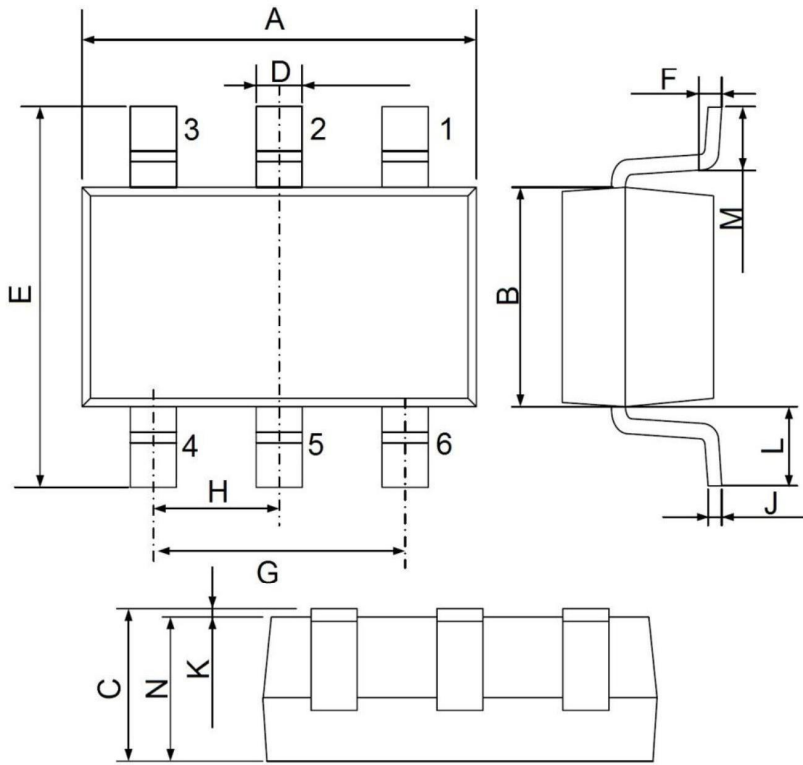


Figure 11 : Normalized Thermal Transient Impedance, Junction-to-Ambient

外形尺寸图 / Package Dimensions

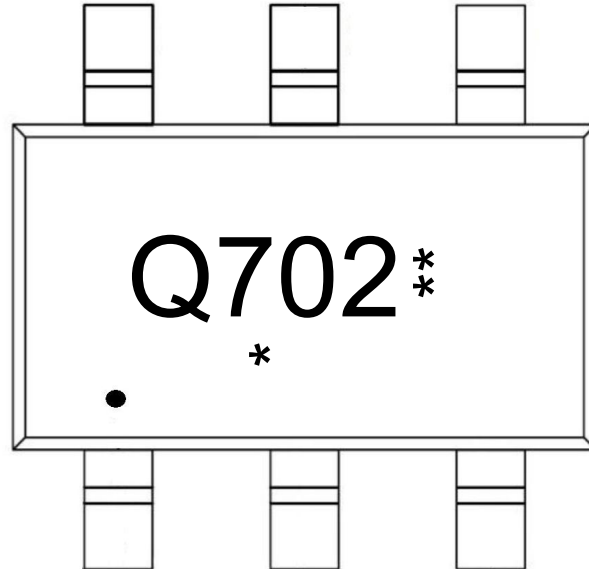
### SOT-363-6L



UNIT: mm

DIM	MIN	MAX
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	1.95	2.25
F	0.20 Typ.	
G	1.20	1.40
H	0.65 Typ.	
J	0.08	0.15
K	0.00	0.10
L	0.525 Ref.	
M	0.26	0.46
N	0.90	1.10

印章说明 / Marking Instructions



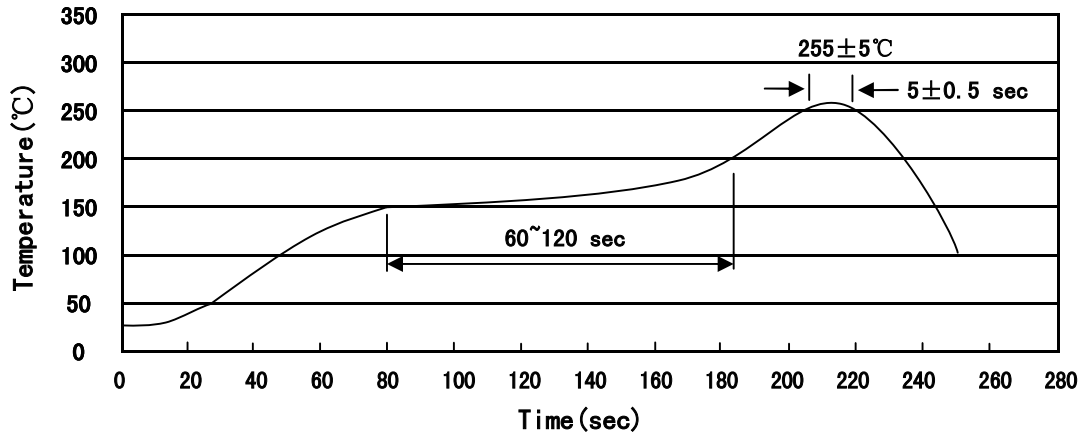
说明：

- ： 为“1”脚
- Q： 为汽车无卤产品标识
- 702： 为型号代码
- \*\*\*： 为生产批号代码，随生产批号变化

Note:

- ： “1” Pin
- Q: Automobile halogen-free product Code
- 702： Product Type Code
- \*\*\*: Lot No. Code, code change with Lot No

**回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)**



说明：

- 1、预热温度 150 ~ 200°C，时间 60 ~ 120sec;
- 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:150~200°C, Time:60~120sec.
- 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：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-363	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**