

BRD7002K2

Rev.J Jan.-2024

/ Descriptions

SOT-363 N MOS

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

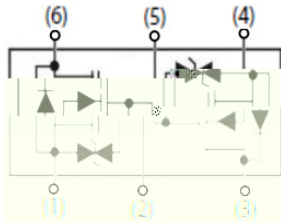
/ Features

Sensitive gate trigger current and Low Holding current,ESD protected diode, HF Product.

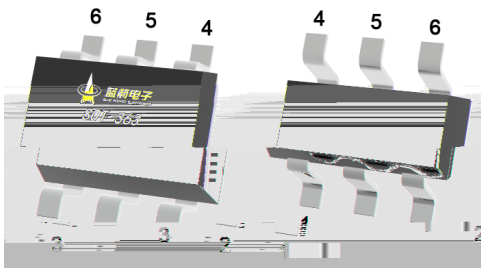
/ Applications

Intended for use in general purpose switching and phase control applications.

/ Equivalent Circuit



/ Pinning



PIN1 4 S PIN 2 5 G PIN 3 6 D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	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}	±20	V
Maximum Power Dissipation	P _D	350	mW
Junction Temperature Range	T _j	150	
Storage Temperature Range	T _{stg}	-55~150	
Maximum Junction-to-Ambient(Note 1)	R ^θ JA(Steady State)	417	°C/W
	R ^θ JA(t≤5s)	300	

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

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	V _{GS} =0 I _D =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0 V _{DS} =60V			1.0	μA
Gate-Source Leakage	I _{GSS}	V _{DS} =0V V _{GS} =±20V			±10	μA
Static Drain-Source On-Resistance	R _{DS(on)(1)}	V _{GS} =10V I _D =0.5A			2.3	Ω
	R _{DS(on)(2)}	V _{GS} =5V I _D =0.05A		1.7	2.7	Ω
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 =250μA	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, V _{DS} =20V f=1MHz,		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, I _D =200 mA V _{DS} =10V;		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		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(ON)}$	$V_{GS}=10V,$ $V_{DD}=25V,$ $I_D=500mA,$ $R_G=25\ \Omega$		6.0		ns
Rise Time	t_r			5.8		
Turn-Off Delay Time	$t_{d(OFF)}$			13.2		
Fall Time	t_f			8.9		

/ Electrical Characteristic Curve

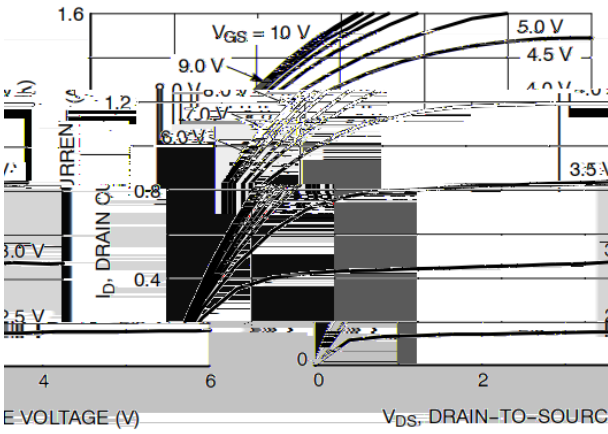


Figure 1. On-Region Characteristics

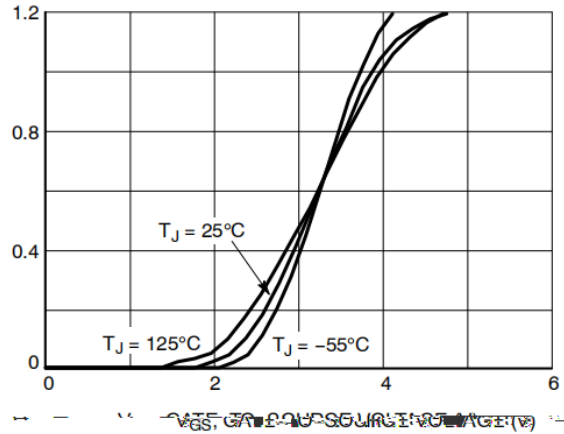


Figure 2. Transfer Characteristics

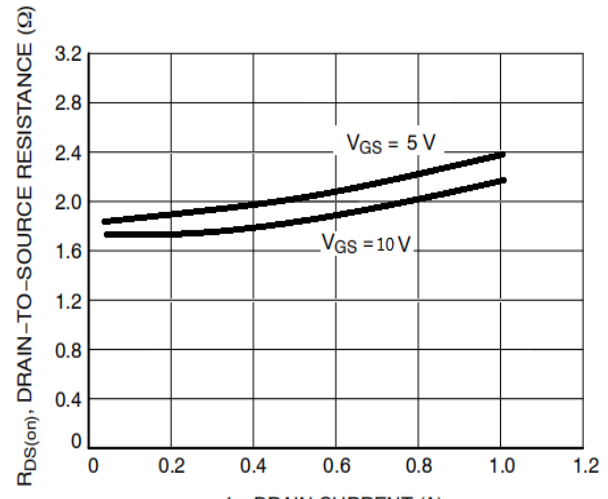


Figure 3. On-Resistance vs. Drain Current and Temperature

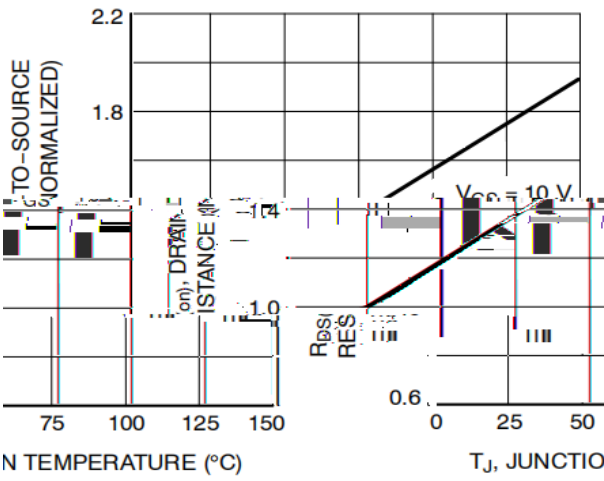


Figure 4. On-Resistance Variation with Temperature

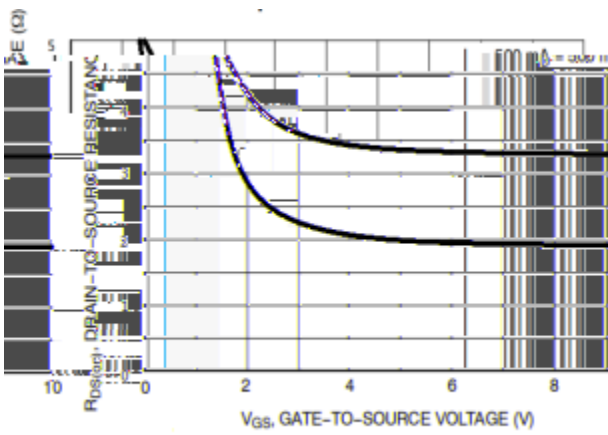


Figure 5. On-Resistance vs. Gate-to-Source Voltage

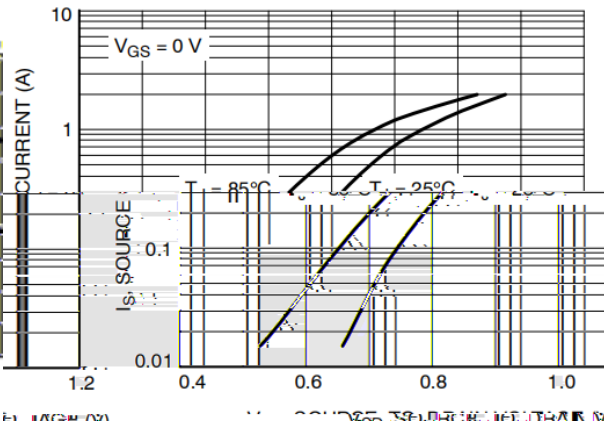


Figure 6. Diode Forward Voltage vs. Current

/ Electrical Characteristic Curve

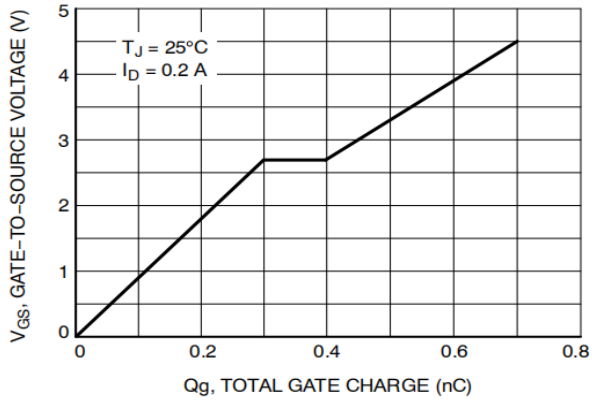


Figure 7 . Gate-to-Source and Drain-to-Source Voltage vs. Total Charge

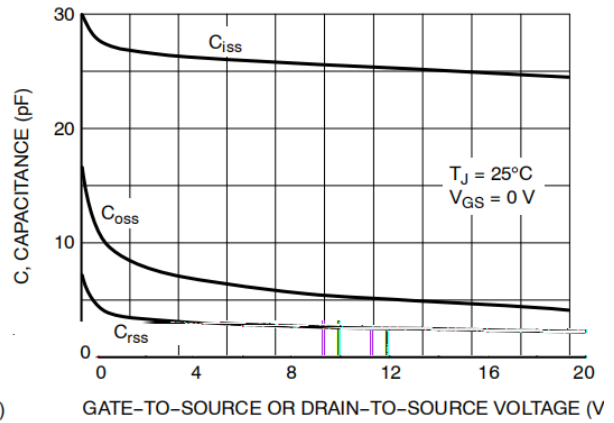


Figure 8. Capacitance Variation

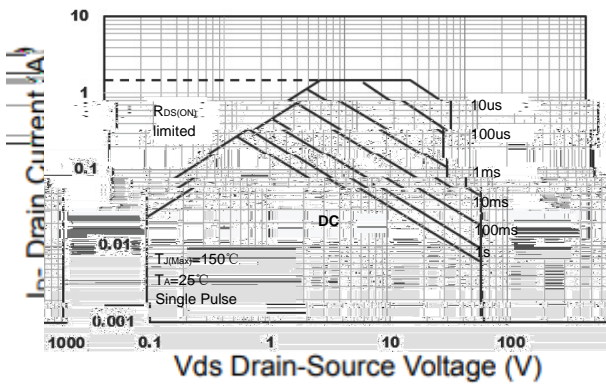


Figure 9 : Safe Operation Area

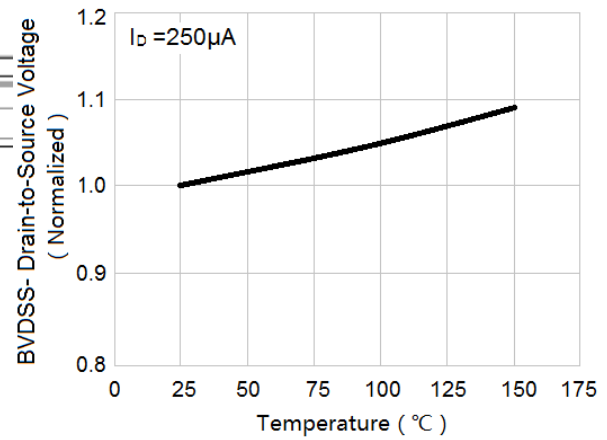
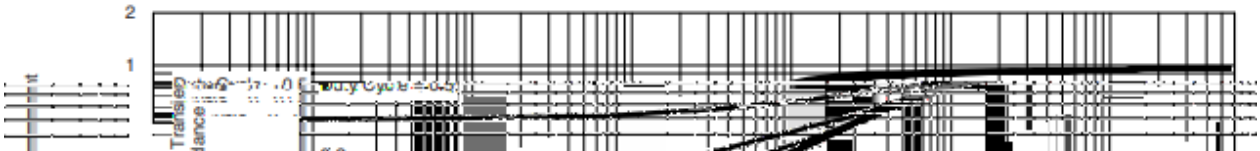
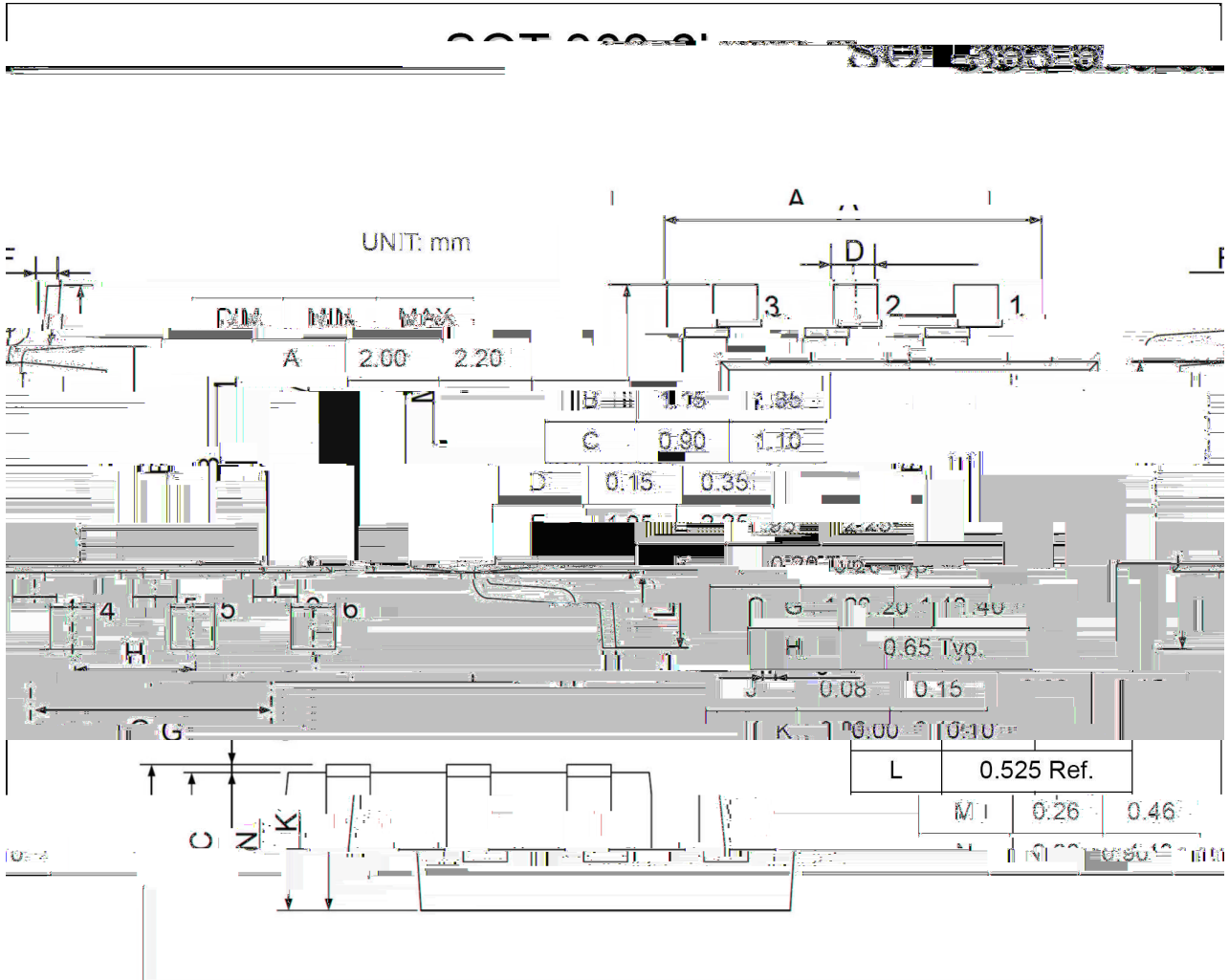


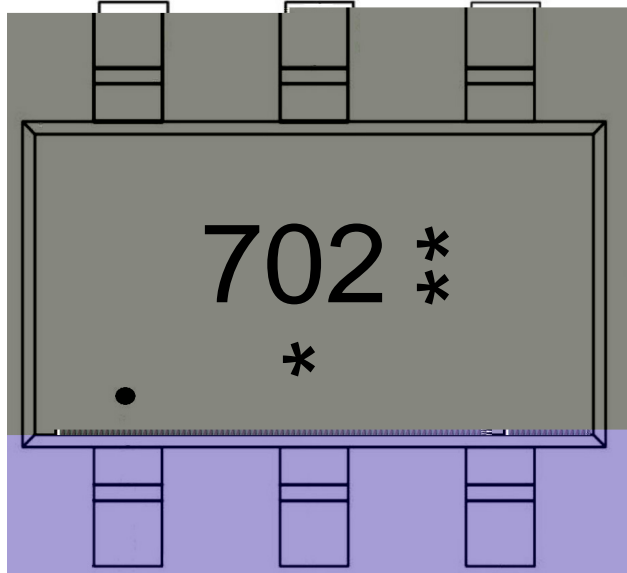
Figure 10 : Breakdown Voltage vs. Temperature



/ Package Dimensions



/ Marking Instructions



● " 1"

702

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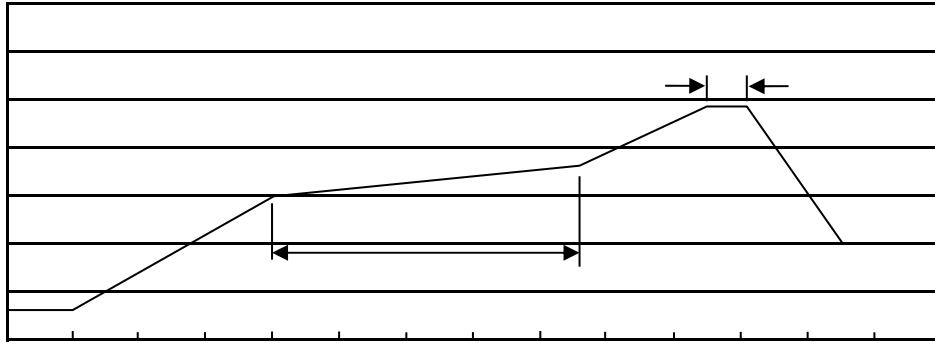
Note:

● " 1" Pin

702 Product Type Code

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

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-----------|----------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5sec; | | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 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 (unit: mm ³)		
	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" x8	180x120x180	390x385x205

/ Notices