

# 2N7002EM3T5G N-Channel Mosfet

#### www.sot23.com.tw

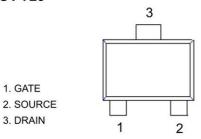
#### **Product Summary**

- V<sub>DS</sub> 60V • I<sub>D</sub> 350mA
- R<sub>DS(ON)</sub>( at V<sub>GS</sub>=10V) <5 ohm • R<sub>DS(ON)</sub>( at V<sub>GS</sub>=4.5V) <4.5 ohm
- ESD Protected:2000V

#### **Application**

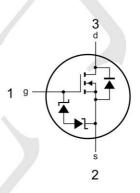
- Load/Power Switching
- · Interfacing Switching
- Logic Level Shift

# Package and Pin Configuration SOT-723



Marking RK \* Or RK \* =wafer tracking no

#### Circuit diagram



### Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	60	V
Gate-Source Voltage	$V_{GS}$	± 20	V
Continuous Drain Current	Ι <sub>D</sub>	±350	mA
Power Dissipation	P <sub>D</sub>	150	mW
Junction Temperature	TJ	150	°C
Storage Temperature	T <sub>STG</sub>	-55~ +150	$^{\circ}$



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## Electrical Characteristics ( T<sub>A</sub> = 25°C unless otherwise noted )

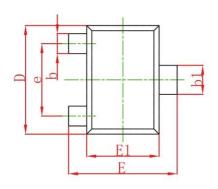
Parameter	Symbol	Test Condition	Min	Тур	Max	Unit	
Drain -Source Breakdown Voltage	V <sub>(BR)DSS</sub>	$V_{GS} = 0V, I_D = 10\mu A$	60			V	
		$V_{GS} = 0V, I_D = 3mA$	60				
Gate Threshold Voltage	$V_{\text{th(GS)}}$	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.0	1.85	2.5	V	
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±10	μA	
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			1	uA	
Static Drain- Source On State	Б	VGS=10V, ID=500mA			5	Ω	
Resistance	$R_{DS(on)}$	VGS=4.5V ID=200mA		1.5	4.3	1 12	
Input Capacitance	Crss	V <sub>GS</sub> =10V			42		
Input Capacitance	Crss	V <sub>GS</sub> =0V			30	pF	
Input Capacitance	Crss	V <sub>GS</sub> =1Mhz			10		
Turn-on delay time	td(on)	$V_{DD} = 25V, V_{GS} = 10V, R_L = 250 \Omega$		2	10	ns	
Turn-on delay time	td(on)	$R_{GS}$ =50K, $R_{GEN}$ =25 $\Omega$			15		

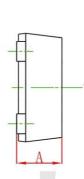


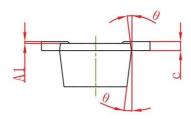


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## **SOT-723 Package Outline Dimensions**







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
Α	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
С	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
е	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	