



2N7002TB

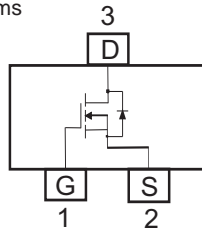
60V N-CANNEL ENHANCEMENT MODE MOSFET

FEATURES

- $R_{DS(ON)}, V_{GS}@10V, I_{DS}@500mA=5\Omega$
- $R_{DS(ON)}, V_{GS}@4.5V, I_{DS}@50mA=7.5\Omega$
- Advanced Trench Process Technology
- High Density Cell Design For Ultra Low On-Resistance
- Specially Designed for Battery Operated Systems, Solid-State Relays Drivers : Relays, Displays, Lamps, Solenoids, Memories, etc.
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std.. (Halogen Free)

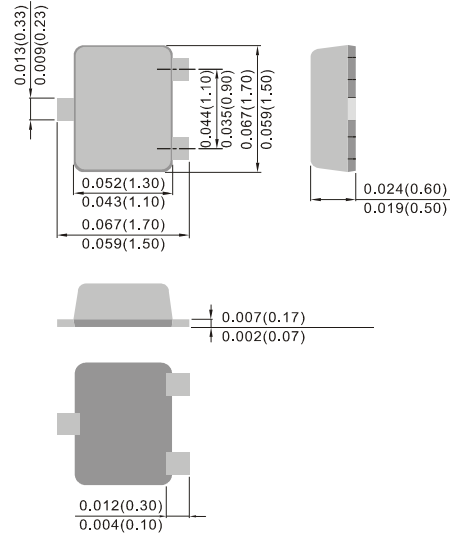
MECHANICAL DATA

- Case: SOT-523, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00007 ounces, 0.002 grams
- Marking: 72



SOT-523

Unit : inch(mm)



Maximum Ratings and Thermal Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	115	mA
Pulsed Drain Current ⁽¹⁾	I_{DM}	800	mA
Maximum Power Dissipation	P_D	$T_A=25^\circ\text{C}$	150
		$T_A=75^\circ\text{C}$	90
Junction-to Ambient Thermal Resistance (PCB mounted) ²	$R_{\theta JA}$	833	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

Note: 1. Maximum DC current limited by the package

2. Surface mounted on FR4 board, $t \leq 10$ sec

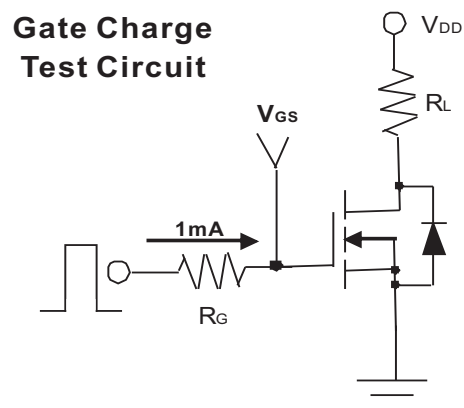
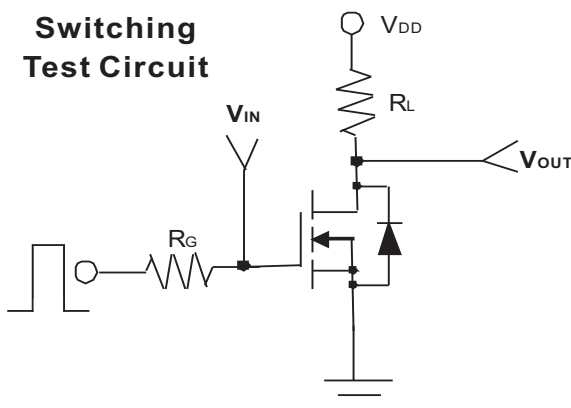
3. Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$



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ELECTRICAL CHARACTERISTICS

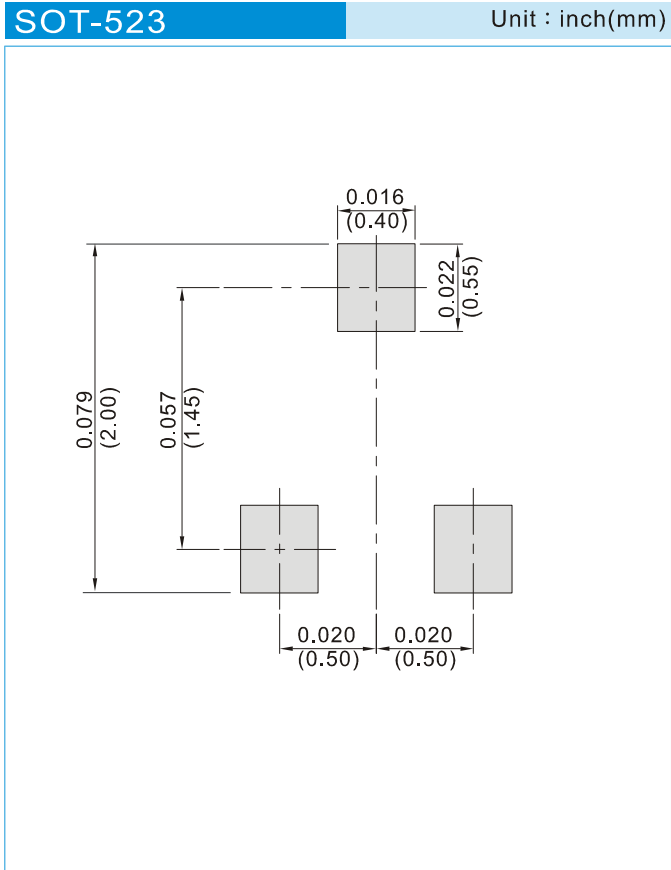
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V, I_D=10\mu A$	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	-	2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=50mA$	-	-	7.5	Ω
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=500mA$	-	-	5	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Gate Body Leakage	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Forward Transconductance	g_{FS}	$V_{DS}=15V, I_D=250mA$	100	-	-	mS
Dynamic						
Total Gate Charge	Q_G	$V_{DS}=15V, I_D=500mA, V_{GS}=4.5V$	-	0.6	0.7	nC
Gate-Source Charge	Q_{GS}		-	0.1	-	
Gate-Drain Charge	Q_{GD}		-	0.08	-	
Turn-On Delay Time	t_{ON}	$V_{DD}=10V, R_L=20\Omega$ $I_D=500mA, V_{GEN}=10V, R_G=10\Omega$	-	9	15	ns
Turn-Off Delay Time	t_{OFF}		-	21	26	
Input Capacitance	C_{ISS}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	-	50	pF
Output Capacitance	C_{OSS}		-	-	25	
Reverse Transfer Capacitance	C_{RSS}		-	-	5	
Source-Drain Diode						
Max.Diode Forward Current	I_S	-	-	-	250	mA
Diode Forward Voltage	V_{SD}	$I_S=250mA, V_{GS}=0V$	-	0.93	1.2	





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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
T/R - 4K per 7" plastic Reel



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Part No_packing code_Version

2N7002TB_R1_00001

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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