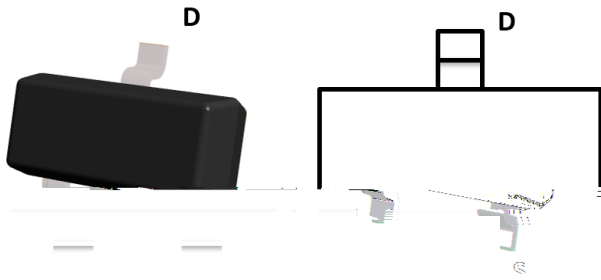




## N-Channel Enhancement Mode Field Effect Transistor



### Product Summary

$V_{DS}$	60V
$I_D$	340mA
$R_{DS(ON)}$ (at $V_{GS}=10V$ )	2.5ohm
$R_{DS(ON)}$ (at $V_{GS}=4.5V$ )	3.0ohm

### General Description

Trench Power MV MOSFET technology  
Voltage controlled small signal switch  
Low input Capacitance  
Fast Switching Speed  
Low Input / Output Leakage

### Applications

Battery operated systems  
Solid-state relays  
Direct logic-level interface TTL/CMOS

### Absolute Maximum Ratings ( $T_A=25$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	$V_{DS}$	60	V
Gate-source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	$I_D$	$T_A=25$ @ Steady State	340
		$T_A=70$ @ Steady State	272
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	1.5	A
Total Power Dissipation @ $T_A=25$	$P_D$	350	mW
Thermal Resistance Junction-to-Ambient @ Steady State <sup>B</sup>	$R_{JA}$	357	/ W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 +150	

### Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
2N7002	F2	7002.	3000	30000	120000	reel



# 2N7002

RECOMMEND  
**2N7002C**  
FOR NEW DESIGN

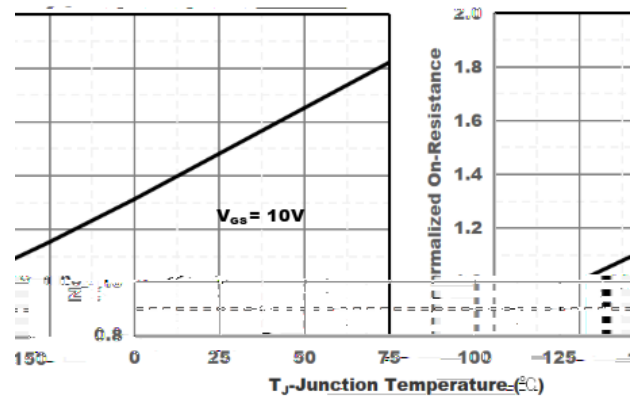
## Electrical Characteristics ( $T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			1	
Gate-Body Leakage Current	$I_{GSS1}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
	$I_{GSS2}$	$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 50$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250$	1	1.5	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=300mA$		1.2	2.5	
		$V_{GS}=4.5V, I_D=200mA$		1.3	3.0	
Forward Transconductance	$g_{fs}$	$V_{DS}=10V, I_D=200mA$	80			ms
Diode Forward Voltage	$V_{SD}$	$I_S=300mA, V_{GS}=0V$			1.2	V

Maximum Body



Typical Performance Characteristics



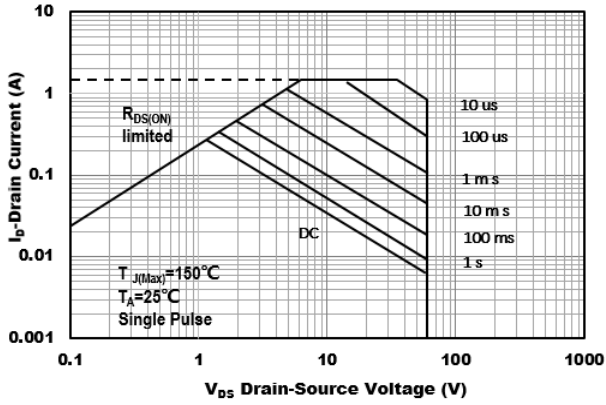


Figure7. Safe Operation Area

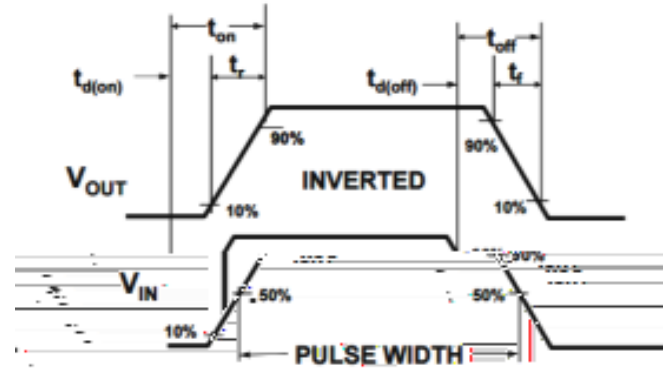


Figure8. Switching wave

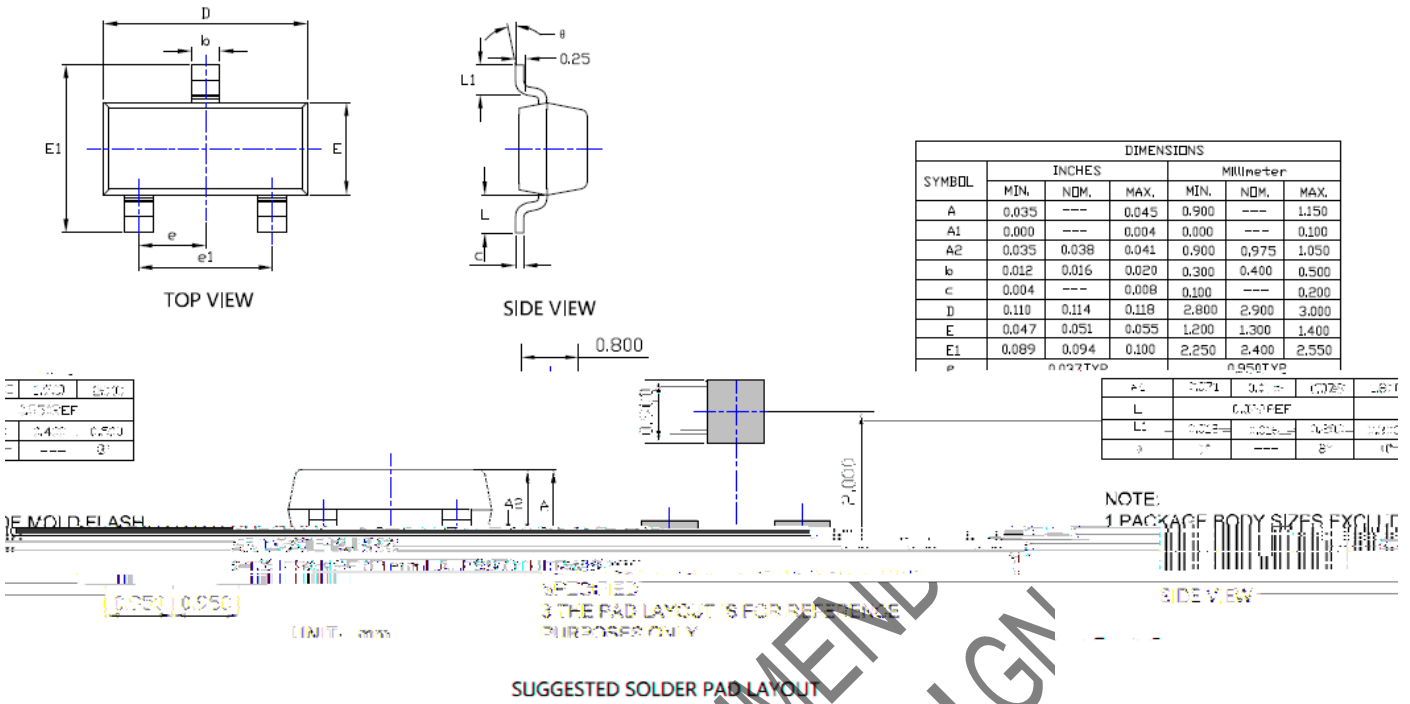
NOT RECOMMEND  
FOR NEW DESIGN



# 2N7002

RECOMMEND  
**2N7002C**  
FOR NEW DESIGN

## SOT-23 Package information





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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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