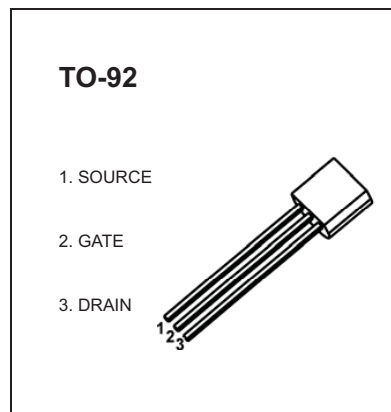


TO-92 Plastic-Encapsulate MOSFETS

2N7000 MOSFET (N-Channel)

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	5Ω@10V	200mA
	6Ω@4.5V	



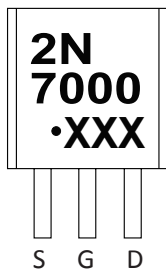
FEATURE

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

APPLICATION

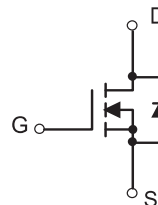
- Load Switch for Portable Devices
- DC/DC Converter

MARKING



2N7000=Device code
Solid dot=Green molding compound device,
if none,the normal device
XXX=Code

Equivalent Circuit



ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
2N7000	TO-92	Bulk	1000pcs/Bag
2N7000-TA	TO-92	Tape	2000pcs/Box

MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Continuous Drain Current	I_D	0.2	A
Power Dissipation	P_D	0.625	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	200	$^{\circ}C/W$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 ~ +150	$^{\circ}C$

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

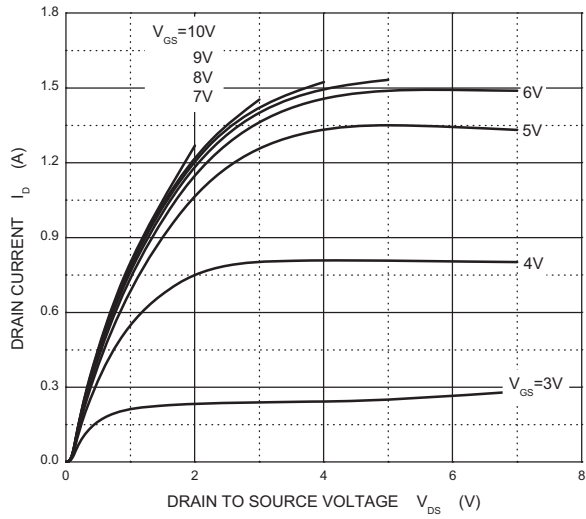
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{ V}, I_D=10\mu\text{A}$	60			V
Gate-Threshold Voltage*	$V_{(GS)th}$	$V_{DS}=V_{GS}, I_D=1\text{mA}$	0.8		3	
Gate-body Leakage	I_{GSS}	$V_{DS}=0\text{ V}, V_{GS}=\pm 15\text{ V}$			± 10	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{ V}, V_{GS}=0\text{ V}$			1	μA
On-state Drain Current	$I_{D(ON)}$	$V_{GS}=4.5\text{ V}, V_{DS}=10\text{ V}$	75			mA
Drain-Source On-Resistance*	$R_{DS(on)}$	$V_{GS}=4.5\text{V}, I_D=75\text{mA}$			6	Ω
		$V_{GS}=10\text{V}, I_D=500\text{mA}$			5	
Forward Trans conductance*	g_{fs}	$V_{DS}=10\text{ V}, I_D=200\text{mA}$	100			ms
Drain-source on-voltage*	$V_{DS(on)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$			2.5	V
		$V_{GS}=4.5\text{V}, I_D=75\text{mA}$			0.45	V
Input Capacitance **	C_{iss}	$V_{DS}=25\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$			60	pF
Output Capacitance **	C_{oss}				25	
Reverse Transfer Capacitance **	C_{rss}				5	
Turn-on Time **	$t_{d(on)}$	$V_{DD}=15\text{ V}, R_L=30\Omega$ $I_D=500\text{mA}, V_{GEN}=10\text{ V}$ $R_G=25\Omega$			10	ns
Turn-off Time **	$t_{d(off)}$				10	

*Pulse test

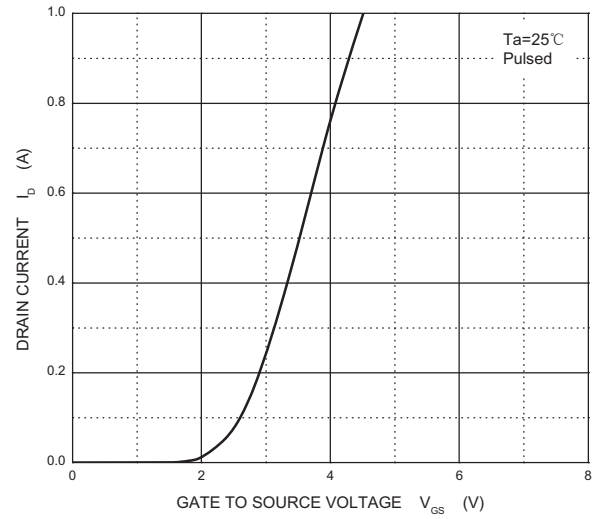
**These parameters have no way to verify.

Typical Characteristics

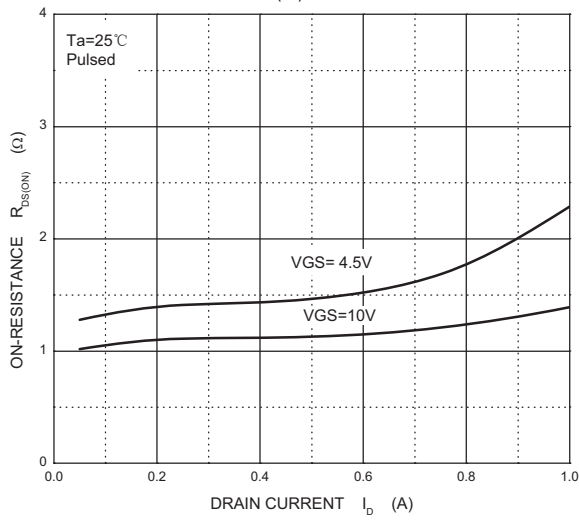
Output Characteristics



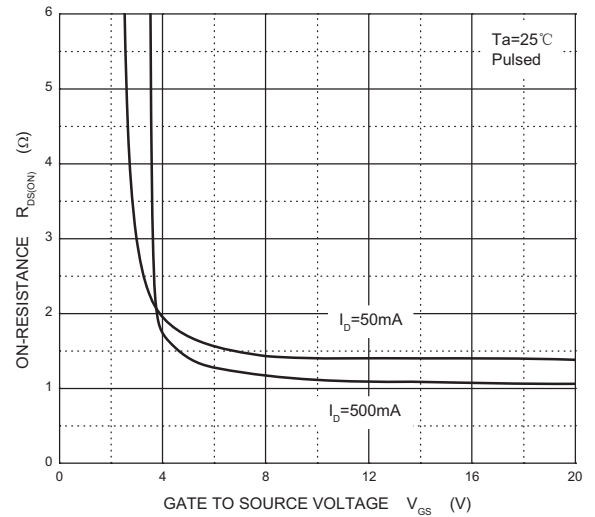
Transfer Characteristics



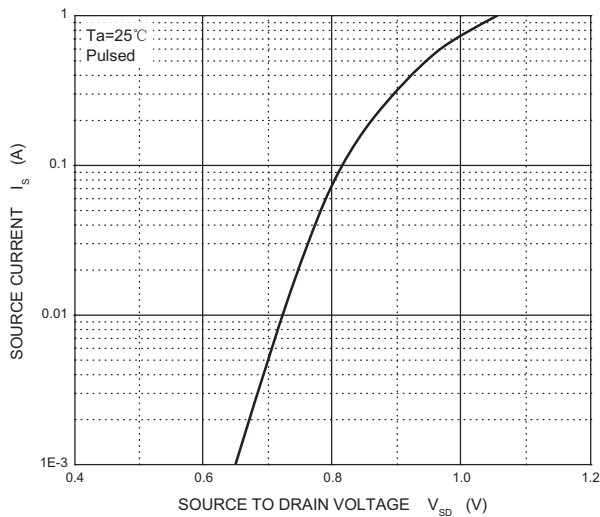
$R_{DS(ON)}$ — I_D



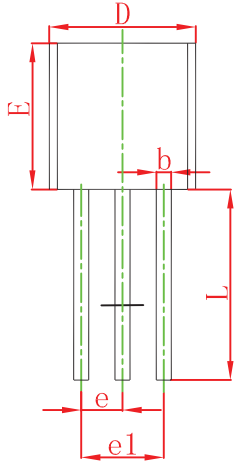
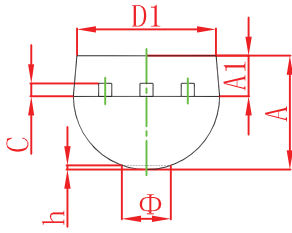
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

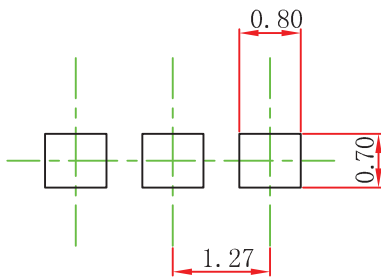


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout



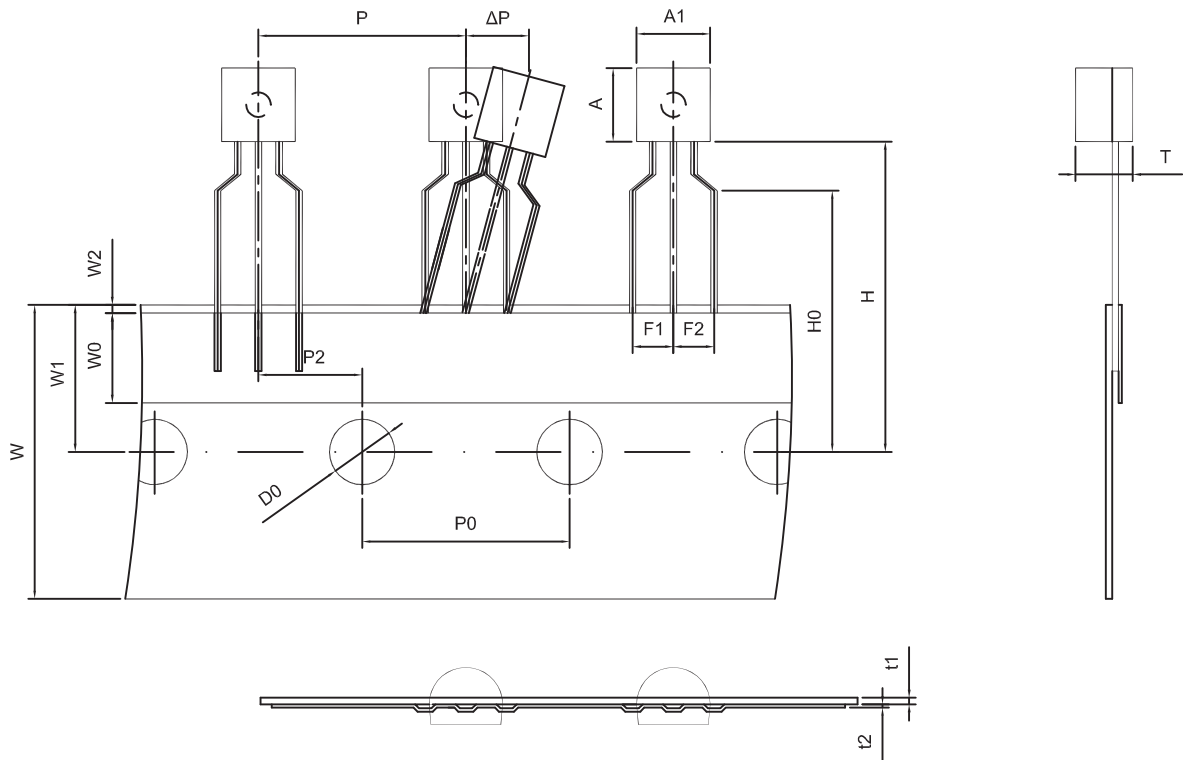
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

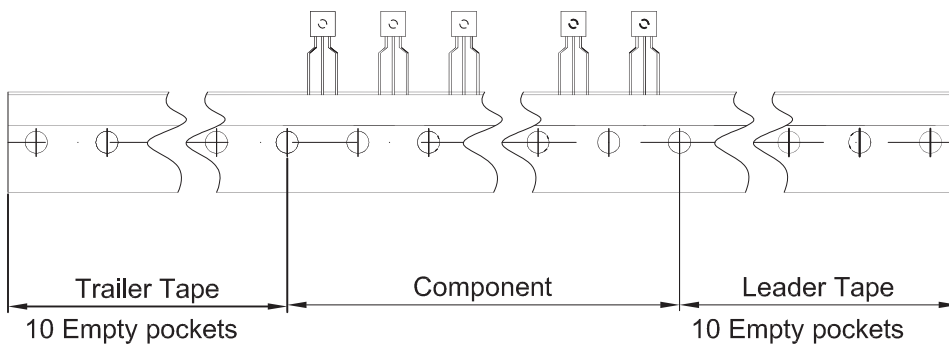
NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250