BORN SEMICONDUCTOR

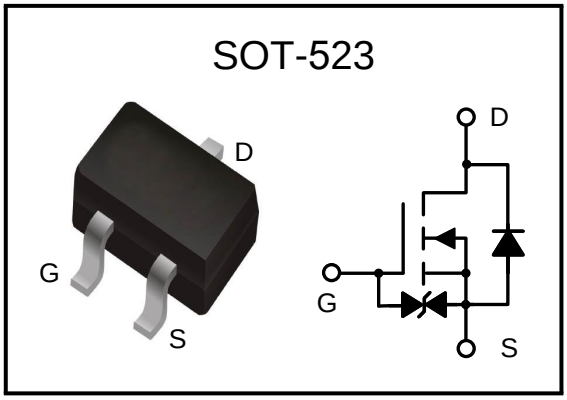
2N7002T

N-Channel MOSFET

Features

- V_{DS}=60V
- I_D=0.3A
- $R_{DS(ON)}$ @V_{GS}=10V, Max=3Ω
- $R_{DS(ON)}$ @V_{GS}=4.5V, Max=4Ω

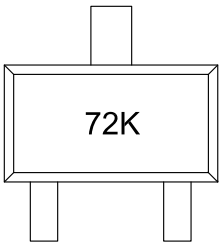
Package



General Description

- Advanced trench cell design
- High speed switch
- High saturation current capability
- SOT-523 for Surface Mount Package.
- ESD protected
- Portable appliances
- Load switch appliances

Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
2N7002T	SOT-523	72K	3K	Tape and reel

Absolute Maximum Ratings (@T_A=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	0.3	A
P_D	Maximum Power Dissipation	0.225	W
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance	556	°C/W
T_J	Operating Junction Temperature	150	°C
T_{stg}	Storage Temperature Range	-55 to +150	°C

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2N7002T

N-Channel MOSFET

Electrical Characteristics @T_J=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V_{DS}	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D =250uA	60	–	–	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D =250uA	1.0	1.5	2.5	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=48V, V_{GS} = 0V	–	–	1	uA
$I_{GSS(1)}$	Gate-Source leakage current	V_{GS} = ±20V, V_{DS} = 0V	–	–	±10	uA
$I_{GSS(2)}$		V_{GS} = ±10V, V_{DS} = 0V	–	–	±0.2	
$I_{GSS(3)}$		V_{GS} = ±5V, V_{DS} = 0V	–	–	±0.1	
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS} = 4.5V, I_D = 0.2A	–	2.4	4.0	Ω
		V_{GS} = 10V, I_D = 0.3A	–	1.9	3.0	
Diode Characteristics						
V_{SD}	Diode Forward Voltage	I_S=300mA,V_{GS}=0V	–	–	1.2	V

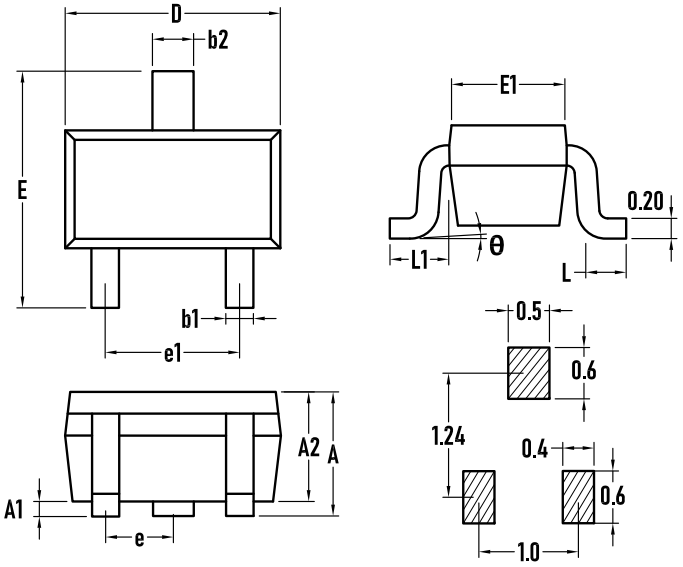
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2N7002T

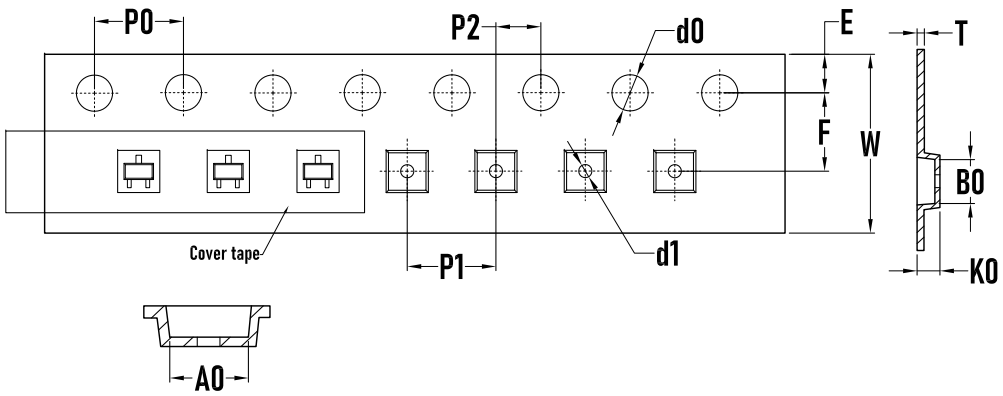
N-Channel MOSFET

Outline Drawing – SOT-523



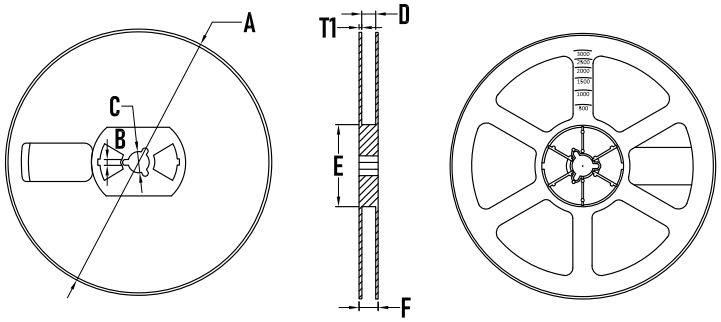
SYMBOL	MILLIMETER		
	MIN	TYP	MAX
A	0.70	0.80	0.90
A1	0.00	0.05	0.10
A2	0.70	0.75	0.80
b1	0.15	0.22	0.29
b2	0.25	0.32	0.39
D	1.50	1.60	1.70
E	1.45	1.60	1.75
E1	0.70	0.80	0.90
e	0.50(TPY.)		
e1	0.90	1.00	1.10
L	0.26	0.36	0.46
L1	0.40(REF)		
θ	0°	4°	8°

Packaging Tape - SOT-523



SYMBOL	MILLIMETER
A0	1.78±0.05
B0	1.78±0.05
d0	1.50+0.10
d1	0.50±0.10
E	1.75±0.10
F	3.50±0.05
K0	0.69±0.05
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
W	8.00±0.20
T	0.20±0.02

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	2.7±0.2
C	13.5±0.2
D	9.6±0.3
E	54.5±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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Revision: 2022-Jan-1-A