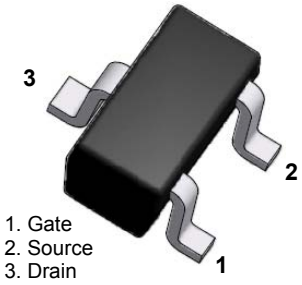
TAK CHEONG®

SEMICONDUCTOR

2SK3019

150mW SOT-523 SURFACE MOUNT
Plastic Package
N-Channel MOSFET

Green Product



1. Gate
2. Source
3. Drain

SOT-523

Absolute Maximum Ratings T_A = 25°C unless otherwise noted

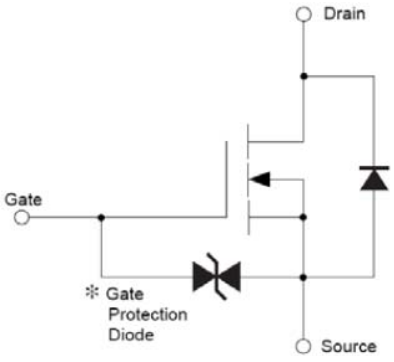
Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Continuous Gate-Source Voltage	±20V	V
I_D	Continuous Drain Current	100	mA
P_D	Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	°C /W
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_J	Operating Junction Temperature	+150	°C

These ratings are limiting values above which the serviceability of the device may be impaired.

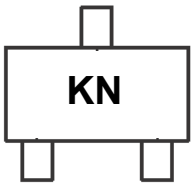
Specification Features:

- Low On-resistance
- Fast Switching Speed
- Low Voltage Drive Makes This Device Ideal for Portable Equipment
- Easily Designed Drive Circuits
- Easy to Parallel
- RoHS Compliant & Green EMC
- Matte Tin(Sn) Lead Finish
- Weight: approx. 0.002g

Electrical Symbol:



Device Marking Code:



Electrical Characteristics (T_A = 25°C unless otherwise noted)

Off Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=10uA	30			Volts
I_{GSS}	Gate-Body Leakage	V_{DS}=0V, V_{GS}=±20V			±1	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V, V_{GS}=0V			1	μA

On Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$V_{th(GS)}$	Gate-Threshold Voltage	V_{DS}= 3V, I_D=100uA	0.8		1.5	Volts
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=4V, I_D=10mA			8	Ω
		V_{GS}=2.5V, I_D=1mA			13	Ω
g_{fs}	Forward Trans Conductance	V_{DS}=3V, I_D=10mA	20			ms
V_{SD}	Drain-Source Diode Forward Voltage	I_S=115mA, V_{GS}=0V			1.2	V

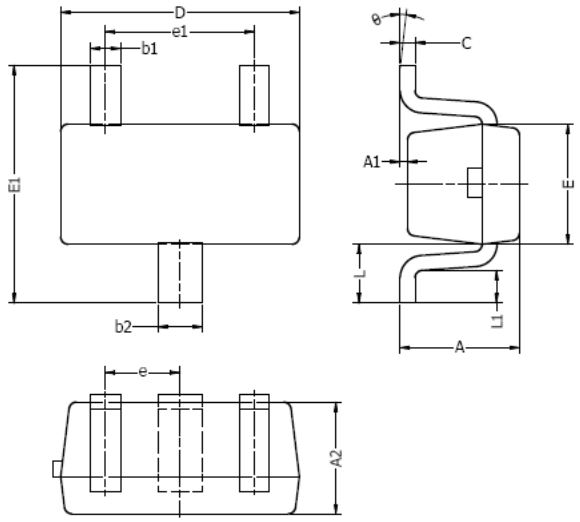
Dynamic Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
Ciss	Input Capacitance	V_{DS} = 5V V_{GS} = 0V f = 1.0MHz		13		pF
Coss	Output Capacitance			9		pF
Crss	Reverse Transfer Capacitance			4		pF

Switching Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$t_{D(on)}$	Turn-on Time	V_{DD}=5V, R_L=500Ω, I_D=10mA, V_{Gs}=5V, R_G = 10Ω		15		nS
$t_{D(off)}$	Turn-off Time			80		nS

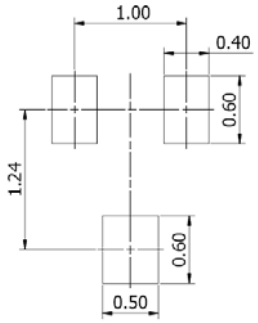
SOT-523 Package Outline



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
A1	0.00	0.10	0.000	0.004
A2	0.70	0.80	0.028	0.031
b1	0.15	0.25	0.006	0.010
b2	0.25	0.35	0.010	0.014
c	0.10	0.20	0.004	0.008
D	1.50	1.70	0.059	0.067
E	0.70	0.90	0.028	0.035
E1	1.45	1.75	0.057	0.069
e	0.50 TYP.		0.020 TYP.	
e1	0.90	1.10	0.035	0.043
L	0.40 REF.		0.016 REF.	
L1	0.10	0.30	0.004	0.012
θ	0^0	8^0	0^0	8^0

NOTES:
1. Above package outline conforms to JEITA EAIJ ED-7500A SC-75A.
2. Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

Typical Soldering Pattern:



NOTICE

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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 with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Tak Cheong Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damagers resulting from such improper use of sale.

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