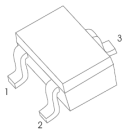
TKMP3139KT

20V P-Channel MOSFET

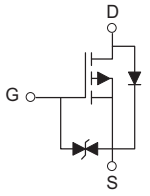
MOSFET Product Summary		
V_{DS}	$R_{DS(on)}$	I_D
-20V	<560mΩ@-4.5V	-0.66A
	<780mΩ@-2.5V	

SOT-523



1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



Feature

- Lead Free Product is Acquired
- Surface Mount Package
- P-Channel Switch with Low RDS(on)
- Operated at Low Logic Level Gate Drive

Applications

- Load/Power Switching
- Interfacing, Logic Switching
- Battery Management for Ultra Small Portable Electronics

Ordering information

Device	Marking	Packaging
TKMP3139KT	39K	3000/Tape & Reel

Maximum Ratings (T_A= 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current (note 1)	I_D	-0.66	A
Pulsed Drain Current (tp=10-s)	I_{DM}	-1.2	A
Power Dissipation (note 1)	P_D	0.15	W
Thermal Resistance from Junction to Ambient(note 1)	$R_{\theta JA}$	850	°C/W
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	-50 to +150	°C
Lead Temperature for Soldering Purposes(1/8” from case for 10 s)	T_L	260	°C

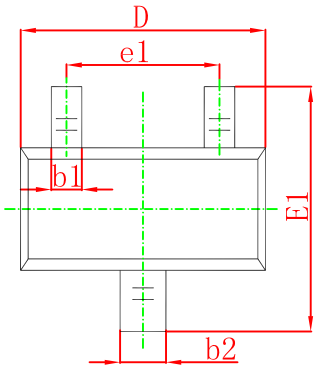
Electrical Characteristics (T_A = 25℃, unless otherwise specified)

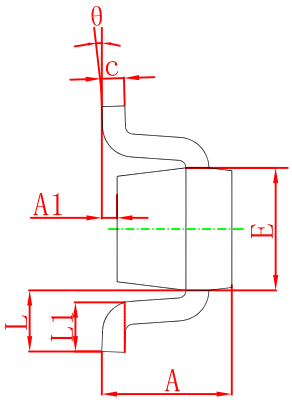
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
STATIC CHARACTERISTICE						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±10	μA
Gate threshold voltage (note 2)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.4	-0.7	-1.0	V
Drain-source on-resistance (note 2)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-0.5A			0.58	Ω
		V_{GS} =-2.5V, I_D =-0.2A			0.80	Ω
Maximum Continuous Drain to Source Diode Forward Current	I_S	--			-0.6	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}	--			-1.2	A
Diode forward voltage	V_{SD}	I_S=-0.5A, V_{GS} = 0V			-1.2	V
DYNAMIC CHARACTERISTICS(note4)						
Input capacitance	C_{iss}	V_{DS} =-16V,V_{GS} =0V, f =1MHz		113		pF
Output capacitance	C_{oss}			15		pF
Reverse transfer capacitance	C_{rss}			9		pF
SWITCHING CHARACTERISTICS(note4)						
Turn-on delay time (note 3)	$t_{d(on)}$	V_{GS}=-4.5V,V_{DS}=-10V, I_D=-200mA,R_{GEN}=10Ω		9		nS
Turn-on rise time (note 3)	t_r			6		nS
Turn-off delay time (note3)	$t_{d(off)}$			33		nS
Turn-off fall time (note 3)	t_f			22		nS

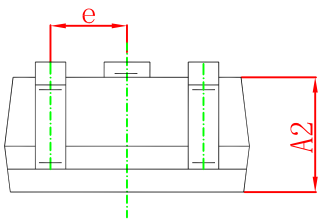
Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producting.

SOT-523 Package Outline Dimensions

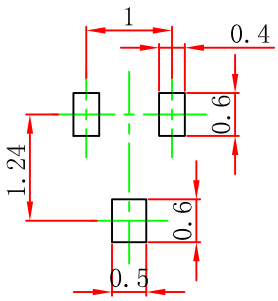






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.