

DP3139KT

DP3139KT P-Channel Enhancement Mode Field Effect Transistor

General description

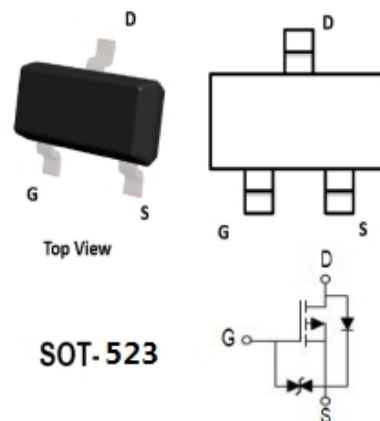
P-Channel Enhancement Mode Field Effect Transistor

Features:

- $V_{DS} : -20V$
- $I_D : -0.66A$
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) < 480 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-2.5V$) < 670 mohm

Applications

- Power Management in Note book
- Portable Equipment
- Battery Powered System



Device Marking Code:

Device Type	Device Marking
DP3139KT	39 or 39K

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

Parameter	Symbol	Value	Unit
Drain-source Voltage	V_{DS}	-20	V
Gate-source Voltage	V_{GS}	± 6	V
Continuous Drain Current	I_D	-660	mA
Pulsed Drain Current ^A	I_{DM}	-1000	mA
Power Dissipation with no heat sink @ TA=25°C	P_D	350	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	375	°C/W
Operation Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

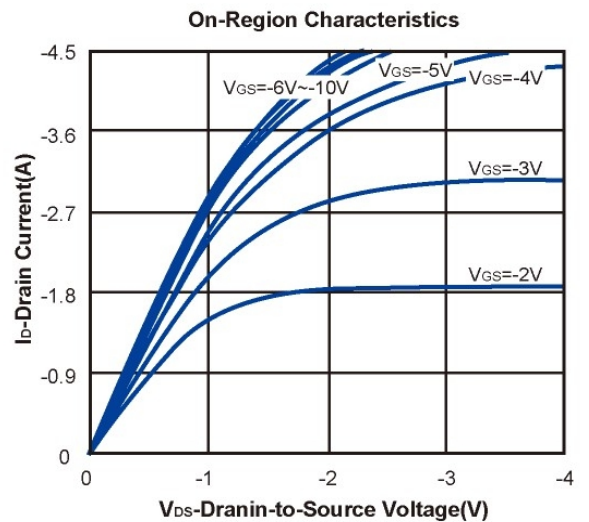
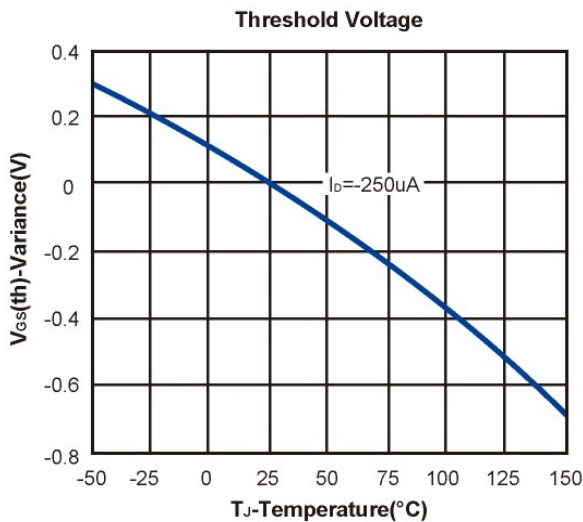
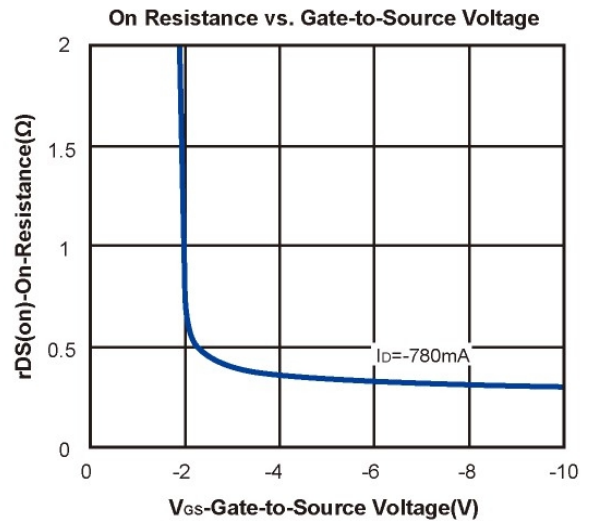
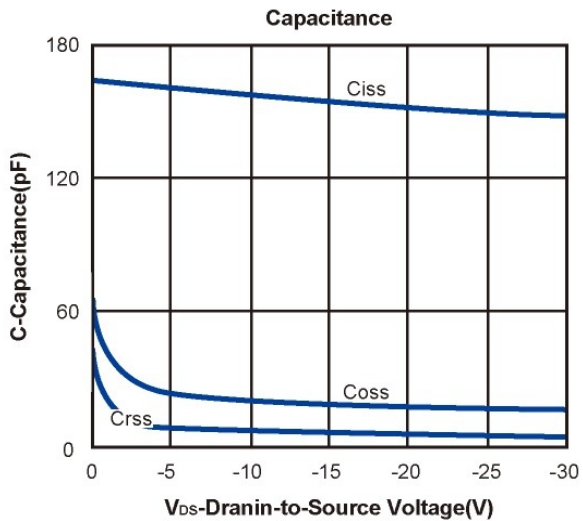
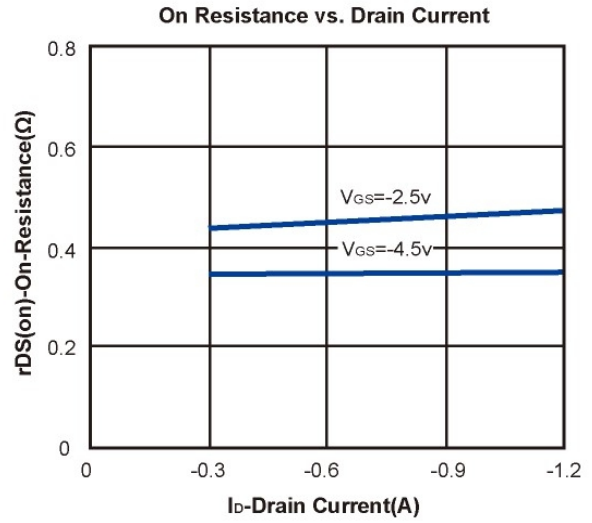
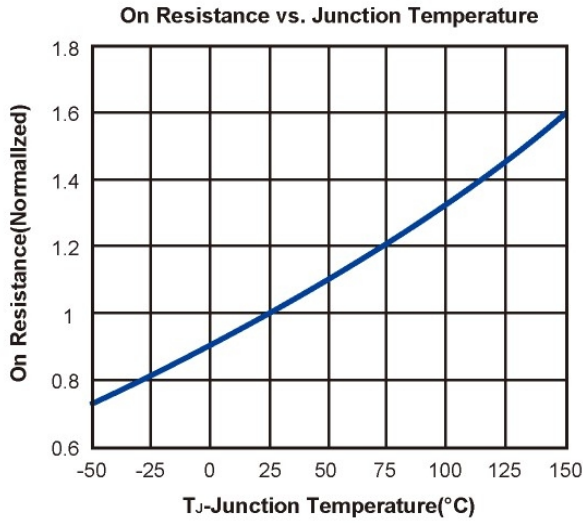
Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1	μA
Gate-body leakage current	I _{GSS1}	V _{GS} = ±4.5V, V _{DS} =0V			±10	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-0.5	-0.8	-1.1	V
Drain-source on-resistance	R _{DS(ON)}	V _{GS} = -4.5V, I _D =-660mA		350	480	mΩ
		V _{GS} = -2.5V, I _D =-400mA		440	670	
Dynamic characteristics ^B						
Input Capacitance	C _{iss}	V _{DS} =-16V, V _{GS} =0V, f=1MHZ		152		pF
Output Capacitance	C _{oss}			18.5		
Reverse Transfer Capacitance	C _{rss}			6		
Switching Characteristics ^B						
Turn-on delay time	t _{d(on)}	V _{GS} =-5.0V, V _{DD} =-10V, R _G =10Ω, I _D =-200mA		51.3		ns
Turn-on rise time	t _r			24.2		
Turn-off delay time	t _{d(off)}			246		
Turn-off fall time	t _f			81.2		
Source-Drain Diode characteristics						
Diode Forward voltage ^C	V _{DS}	V _{GS} =0V, I _S =-150mA			-1.2	V

Notes:

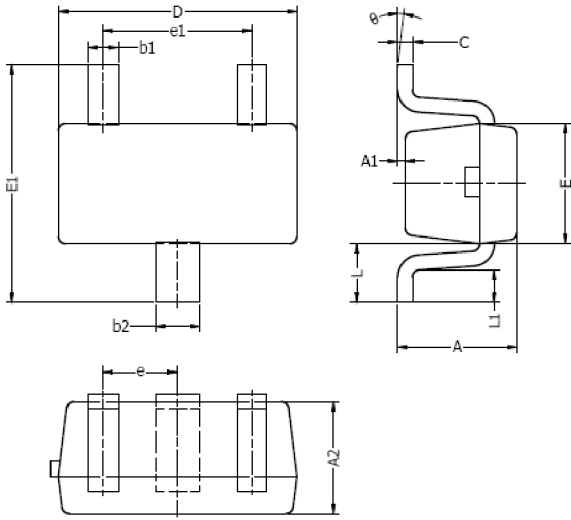
- A. Repetitive Rating: Pulse width limited by maximum junction temperature.
- B. These parameters have no way to verify.
- C. Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 0.5%.

Typical Performance Characteristics



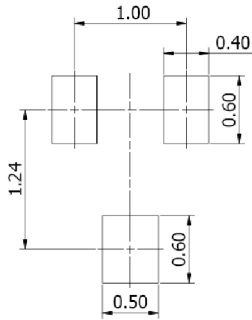
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SOT-523 Package Outline



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
theta	0°	8°	0°	8°

Typical Soldering Pattern:



Note

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

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