

DN3134KT

DN3134KT N-Channel Enhancement Mode Field Effect Transistor

General description

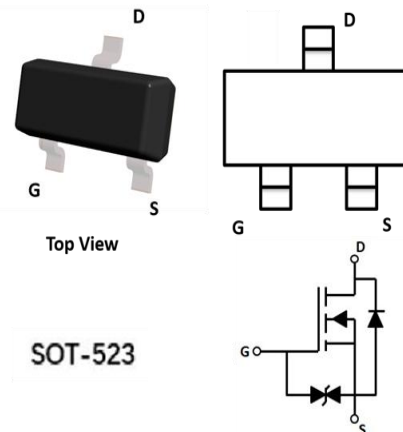
N-Channel Enhancement Mode Field Effect Transistor

Features:

- V_{DS} : 20V
- I_D : 0.75A
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) < 270 mohm
- $R_{DS(ON)}$ (at $V_{GS}=2.5V$) < 330 mohm

Applications

- Drivers: Relays, Solenoid, Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers



SOT-523

Device Marking Code:

Device Type	Device Marking
DN3134KT	34K or 34

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}	± 8	V
Continuous Drain Current	I_D	750	mA
Pulsed Drain Current ^A	I_{DM}	1000	mA
Power Dissipation with no heat sink @ $T_A=25^\circ\text{C}$	P_D	150	mW
Maximum Power Dissipation with infinite heat sink @ $T_c=25^\circ\text{C}$		275	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
Operation Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$

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Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
Gate-body leakage current	I_{GSS1}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 10	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.45	0.75	1.2	V
Drain-source on-resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=750mA$		220	300	m Ω
		$V_{GS}=2.5V, I_D=400mA$		260	400	
Dynamic characteristics ^B						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		21		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			8		
Switching Characteristics ^B						
Turn-on delay time	$t_{d(on)}$	$V_{GS}=4.5V, V_{DD}=10V, R_G=10\Omega, I_D=500mA$		6.7		ns
Turn-on rise time	t_r			4.8		
Turn-off delay time	$t_{d(off)}$			17.3		
Turn-off fall time	t_f			7.4		
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.

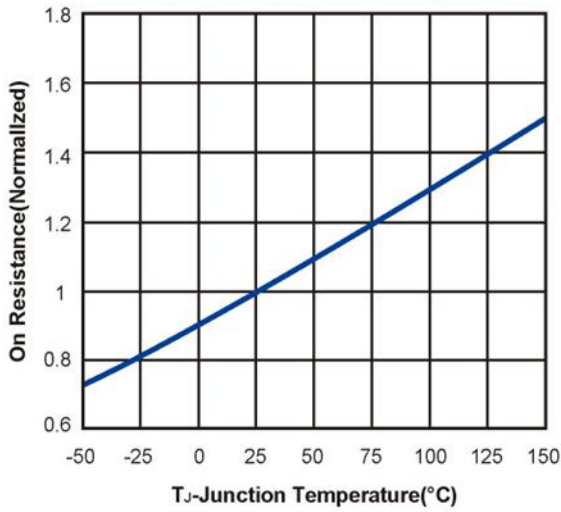
C. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.

Typical Performance Characteristics

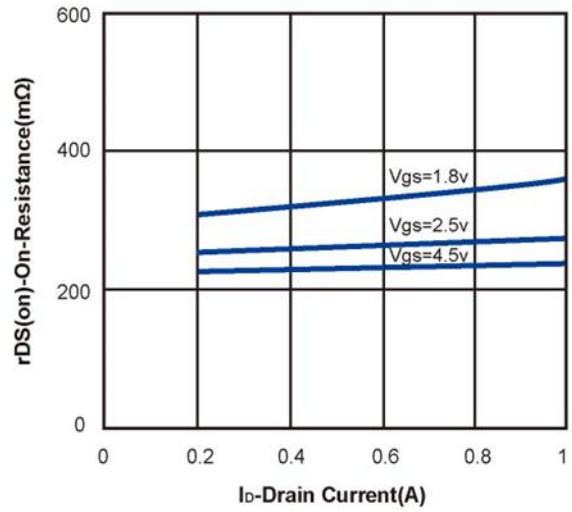
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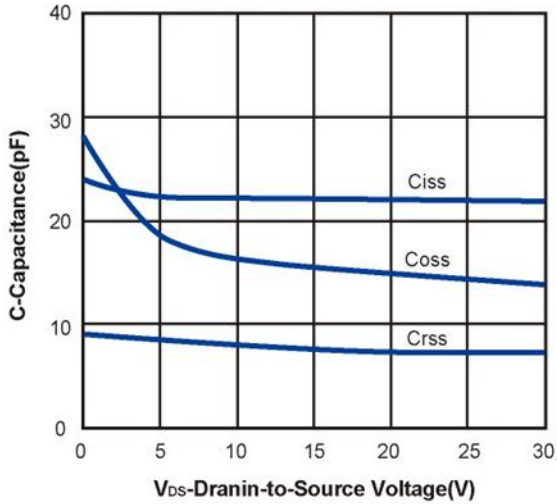
On Resistance vs. Junction Temperature



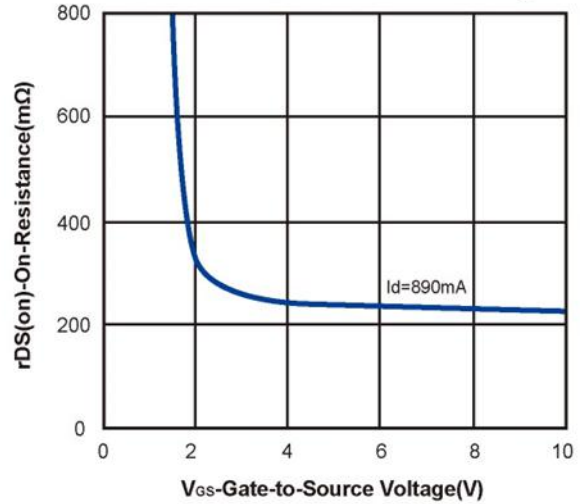
On Resistance vs. Drain Current



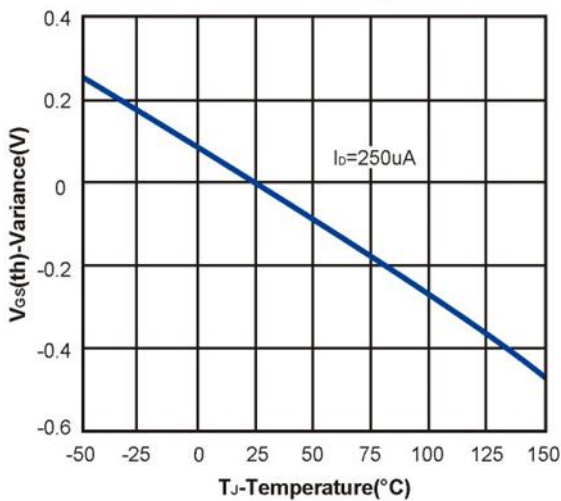
Capacitance



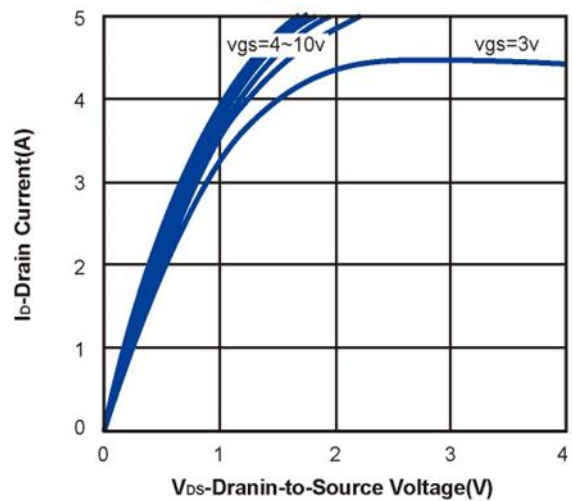
On Resistance vs. Gate-to-Source Voltage



Threshold Voltage

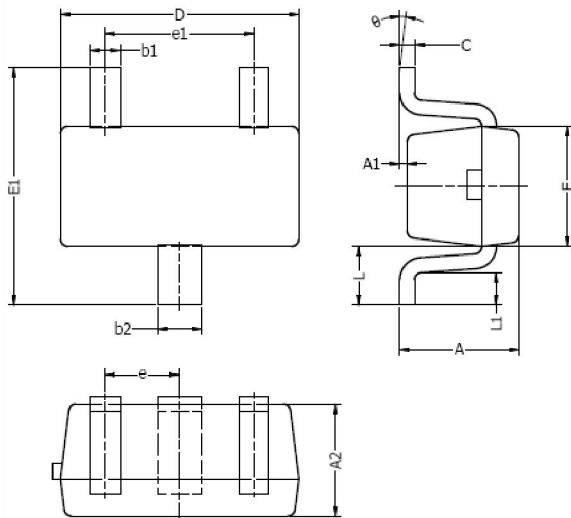


On-Region Characteristics

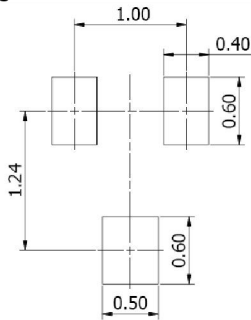


SOT-523 Package Outline

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Typical Soldering Pattern:



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°	8°	0°	8°

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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