

# DN3134KW

## DN3134KW N-Channel Enhancement Mode Field Effect Transistor

### General description

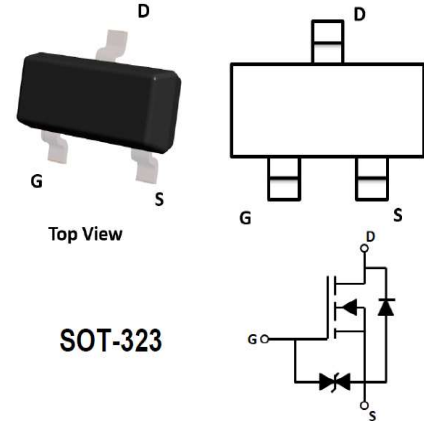
N-Channel Enhancement Mode Field Effect Transistor

### 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-323

Device Marking Code:

Device Type	Device Marking
DN3134KW	34K

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

Parameter	Symbol	Value	Unit
Drain-source Voltage	$V_{DS}$	20	V
Gate-source Voltage	$V_{GS}$	$\pm 8$	V
Continuous Drain Current	$I_D$	750	mA
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	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	$^\circ\text{C/W}$
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<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	μA
Gate-body leakage current	I <sub>GSS1</sub>	V <sub>GS</sub> = ±8V, V <sub>DS</sub> =0V			±10	μA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250μA	0.45	0.75	1.2	V
Drain-source on-resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> =750mA		220	300	mΩ
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> =400mA		260	400	
<b>Dynamic characteristics <sup>B</sup></b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHZ		21		pF
Output Capacitance	C <sub>oss</sub>			15		
Reverse Transfer Capacitance	C <sub>rss</sub>			8		
<b>Switching Characteristics <sup>B</sup></b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> =4.5V, V <sub>DD</sub> =10V, R <sub>G</sub> =10Ω, I <sub>D</sub> =50 0mA		6.7		ns
Turn-on rise time	t <sub>r</sub>			4.8		
Turn-off delay time	t <sub>d(off)</sub>			17.3		
Turn-off fall time	t <sub>f</sub>			7.4		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage <sup>C</sup>	V <sub>DS</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =150mA			1.2	V

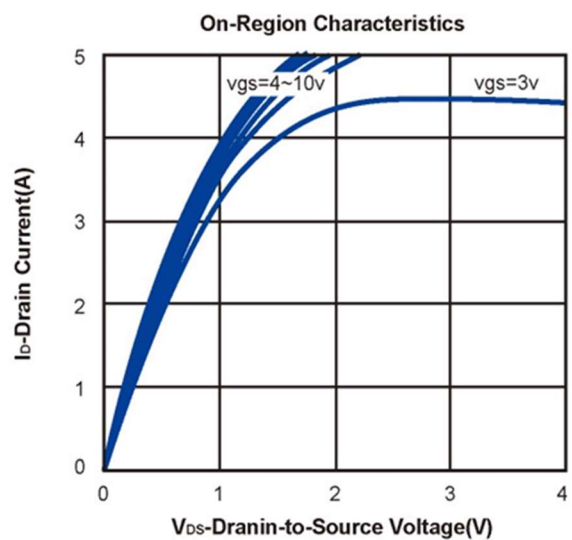
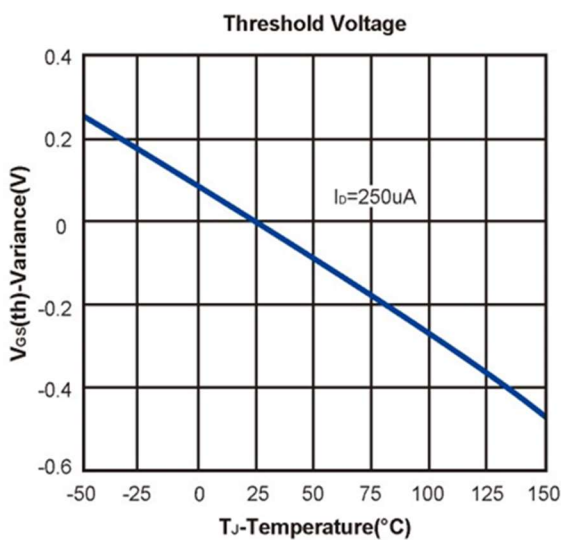
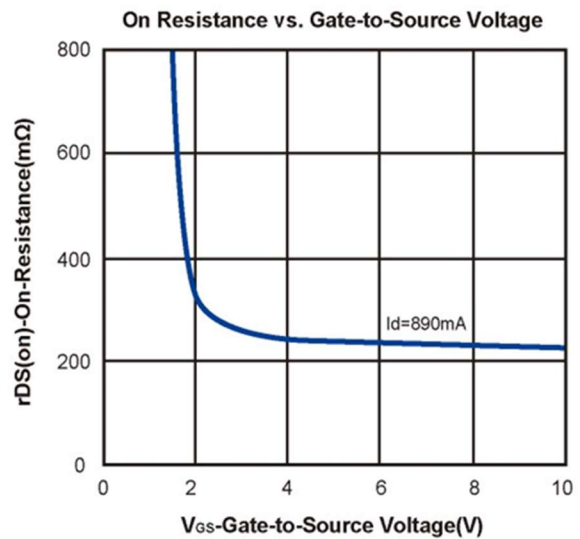
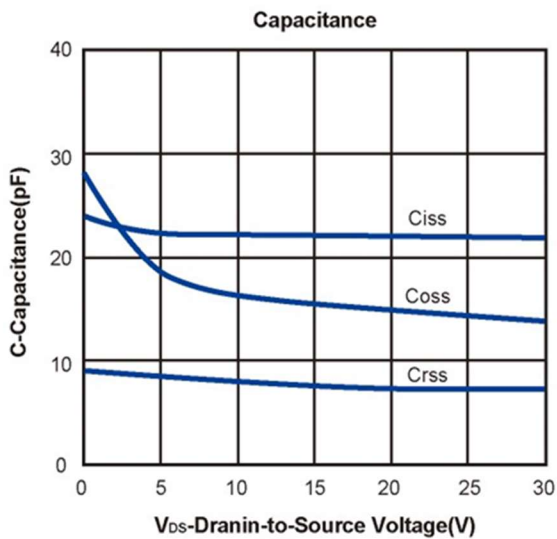
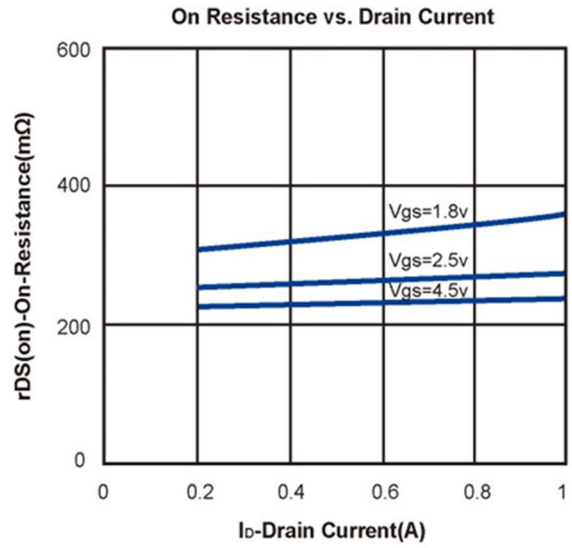
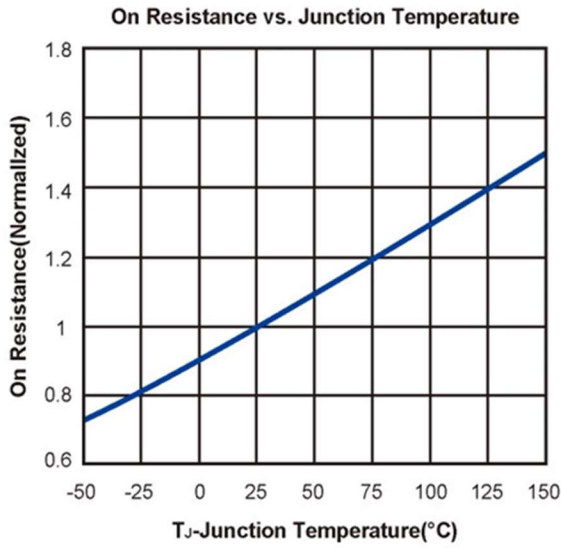
Notes:

A. Repetitive Rating: Pulse width limited by maximum junction temperature.

B. These parameters have no way to verify.

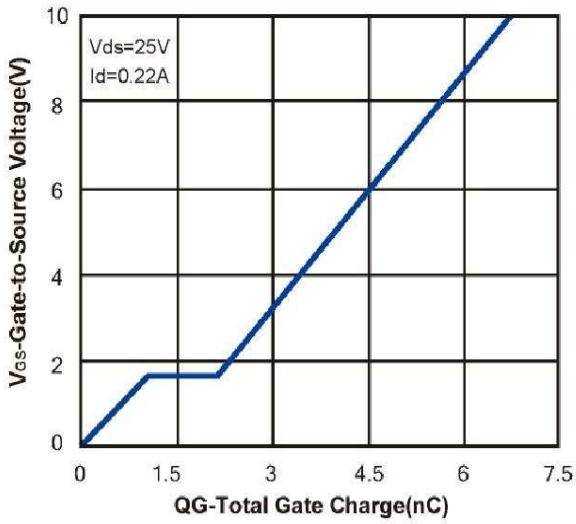
C. Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 0.5%.

## Typical Performance Characteristics

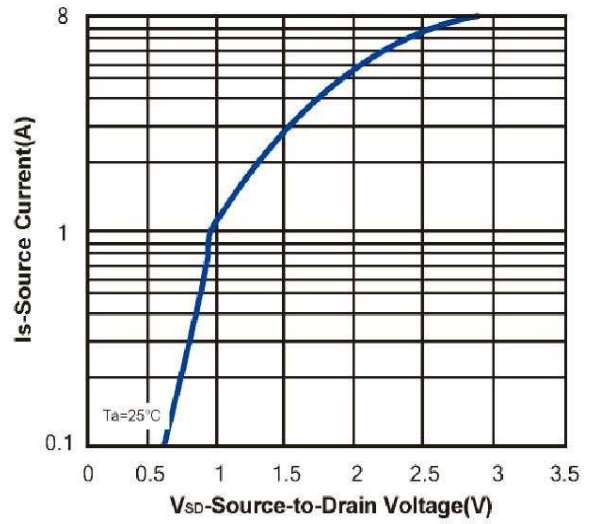


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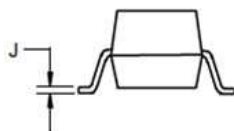
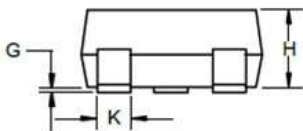
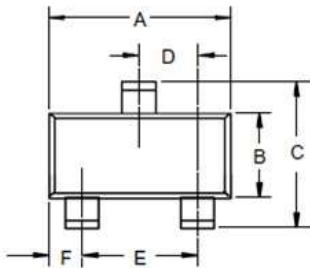
Gate Charge



Body-diode characteristics

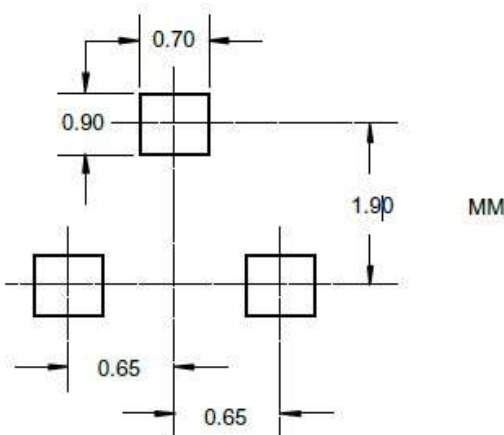


## SOT-323 Package Outline



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

## Suggested Pad Layout



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