

DN2122KM

DN2122KM N-Channel Enhancement Mode Field Effect Transistor

General description

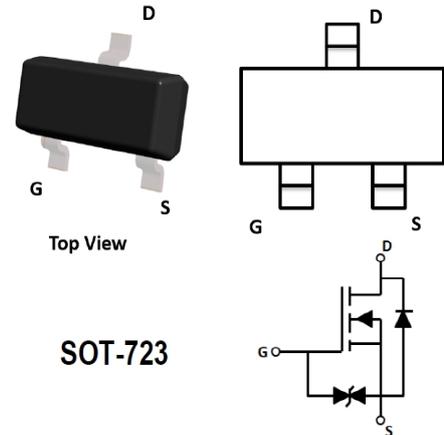
N-Channel Enhancement Mode Field Effect Transistor

Features:

- V_{DS} : 20V
- I_D : 0.75A
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) < 250 mohm
- $R_{DS(ON)}$ (at $V_{GS}=2.5V$) < 350 mohm
- ESD Protected Up to 3.0KV (HBM)
- Trench Power LV MOSFET technology
- High Power and current handing capability

Applications

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift



SOT-723

Device Marking Code:

Device Type	Device Marking
DN2122KM	KF/ZF

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}	±12	V
Continuous Drain Current	I_D	750	mA
Pulsed Drain Current ^A	I_{DM}	3	A
Power Dissipation with no heat sink @ $T_A=25^\circ\text{C}$	P_D	150	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	$^\circ\text{C}$

DN2122KM

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{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_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$		2.5	± 10	μA
		$V_{GS}=\pm 8V, V_{DS}=0V$		500	± 2000	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.35	0.75	1.1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=0.65A$		130	250	m Ω
		$V_{GS}=2.5V, I_D=0.3A$		180	350	
Diode Forward Voltage ^C	V_{SD}	$I_S=0.5A, V_{GS}=0V$			1.2	V
Maximum Body-Diode Continuous Current	I_S				0.75	A
Dynamic Parameters ^B						
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V, f=1\text{MHz}$			110	pF
Output Capacitance	C_{oss}				18	
Reverse Transfer Capacitance	C_{rss}				15	
Switching Parameters ^B						
Total Gate Charge	Q_g	$V_{GS}=4.5V, V_{DS}=10V, I_D=0.5A$		1.1		nC
Gate Source Charge	Q_{gs}			0.19		
Gate Drain Charge	Q_{gd}			0.27		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=4.5V, V_{DD}=10V, R_G=10\Omega, I_D=0.5A$		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		

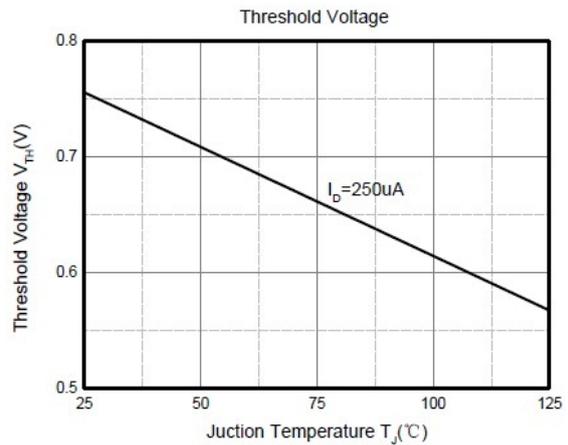
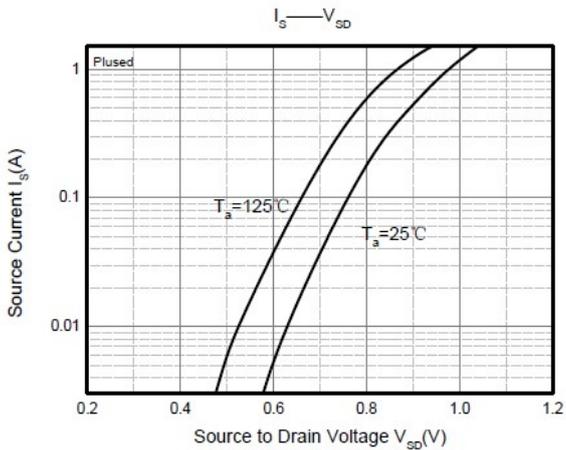
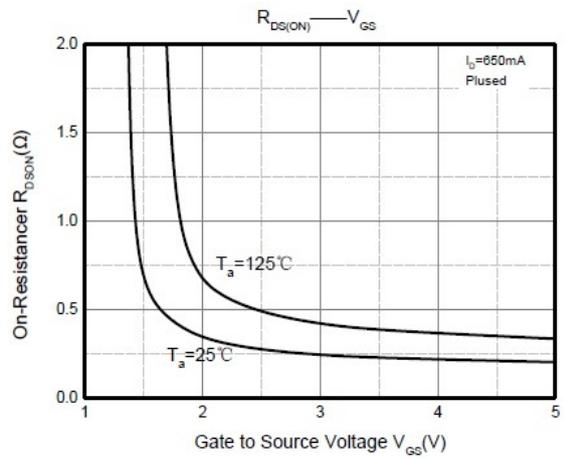
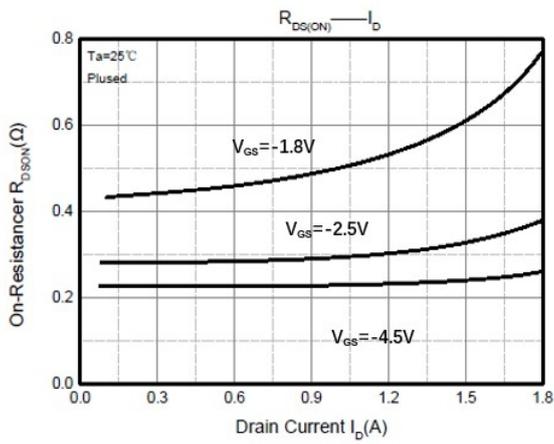
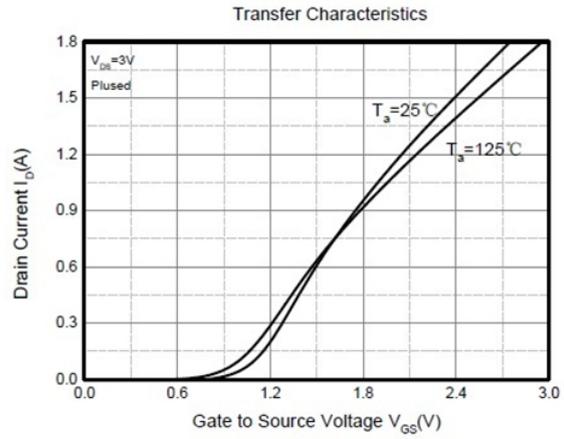
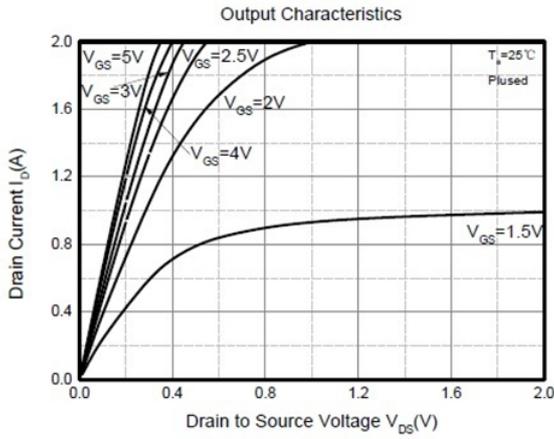
Notes:

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 $\leq 0.5\%$.

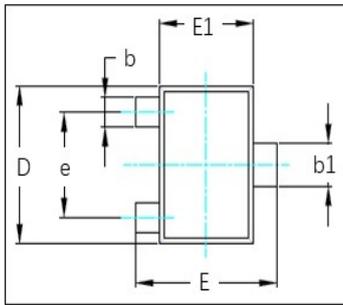
Typical Performance Characteristics



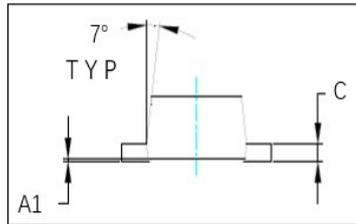
DN2122KM

SOT-723 Package Outline

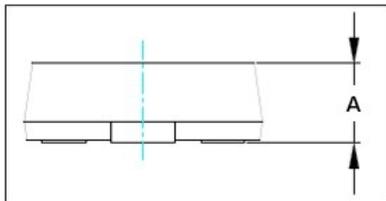
Top view



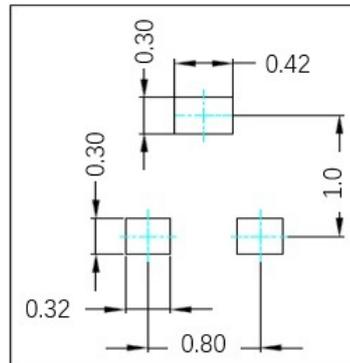
Side view



Front view



Soldering Pattern



SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.430	0.500
A1	0.000	0.050
b	0.170	0.270
b1	0.270	0.370
C	0.080	0.150
D	1.150	1.250
E	1.500	1.250
E1	0.750	0.850
e	0.800 TYP.	
Θ	0°	7°

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