

DN3541KM

DN3541KM N-Channel Enhancement Mode Field Effect Transistor

General description

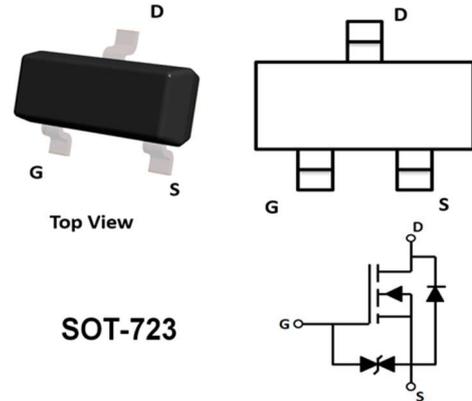
N-Channel Enhancement Mode Field Effect Transistor

Features:

- VDS30V
- ID 100mA
- RDS(ON)(at VGS=4.5V) < 8.0 ohm
- RDS(ON)(at VGS=2.5V) < 13.0 ohm
- ESD Protected Up to 3.0KV (HBM)

Applications

- Trench Power LV MOSFET technology
- High Power and current handing capability
- Load/Power Switching
- Interfacing Switching
- Logic Level Shift



SOT-723

Device Marking Code:

Device Type	Device Marking
DN3541KM	KN

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

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V _{DS}	30	V
Gate-source Voltage	V _{GS}	±20	V
Drain Current	I _D	100	mA
Pulsed Drain Current ^A	I _{DM}	1.5	A
Total Power Dissipation @ T _A =25°C	P _D	0.15	W
Thermal Resistance Junction-to-Ambient @ Steady State	R _{θJA}	357	°C/ W
Junction and Storage Temperature Range	T _J , T _{STG}	-55~+150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±2.0	μA
		V _{GS} = ±16V, V _{DS} =0V			±200	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	0.8	1.1	1.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 4.5V, I _D =100mA		2.5	8.0	Ω
		V _{GS} = 2.5V, I _D =10mA		3.0	13.0	
Diode Forward Voltage ^C	V _{SD}	I _S =100mA, V _{GS} =0V			1.2	V
Maximum Body-Diode Continuous Current	I _S				100	mA
Dynamic Parameters ^B						
Input Capacitance	C _{ISS}	V _{DS} =30V, V _{GS} =0V, f=1MHZ			18	pF
Output Capacitance	C _{OSS}				12	
Reverse Transfer Capacitance	C _{rss}				7	
Switching Parameters ^B						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =30V, I _D =0.1A		1.7		nC
Gate Source Charge	Q _{gs}			0.19		
Gate Drain Charge	Q _{gd}			0.27		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =30V, R _G =6Ω, I _D =0.1A		5		ns
Turn-off Delay Time	t _{D(off)}			17		

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

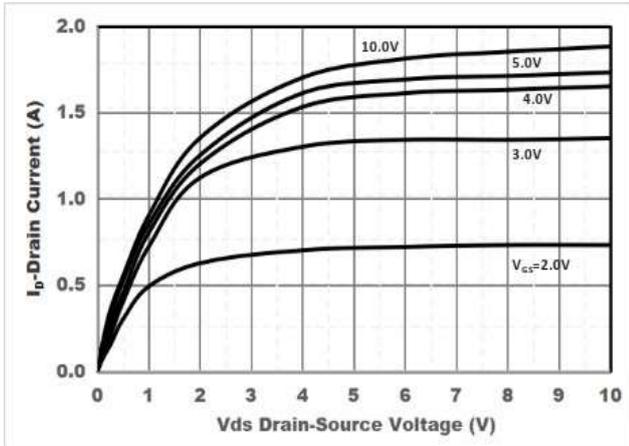


Figure1. Output Characteristics

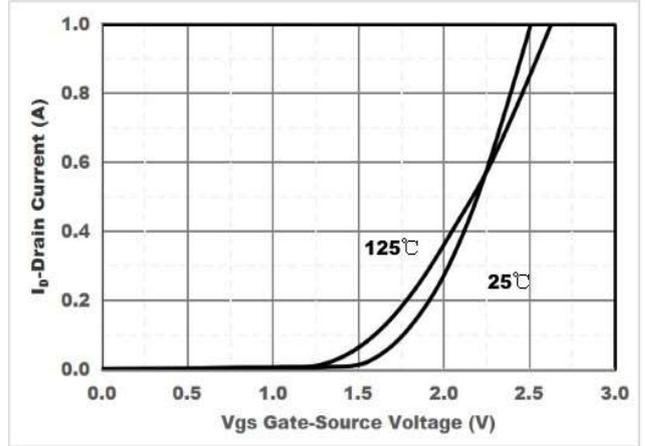


Figure2. Transfer Characteristics

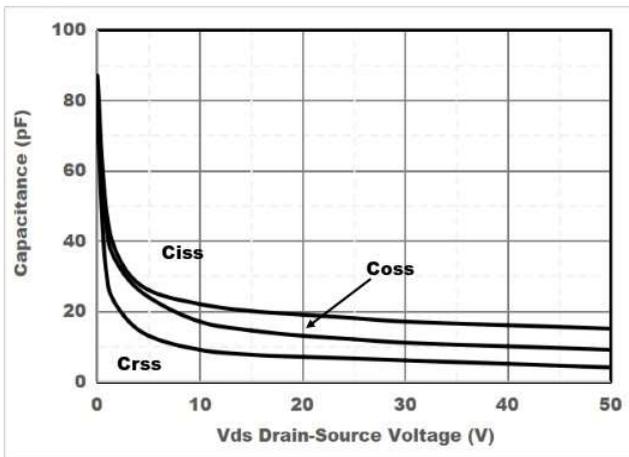


Figure3. Capacitance Characteristics

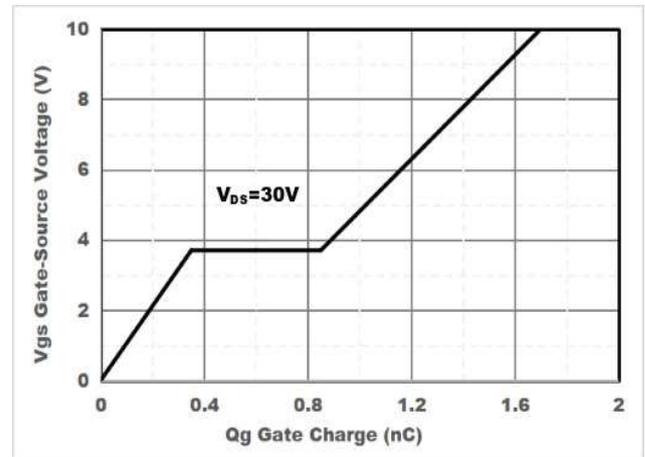


Figure4. Gate Charge

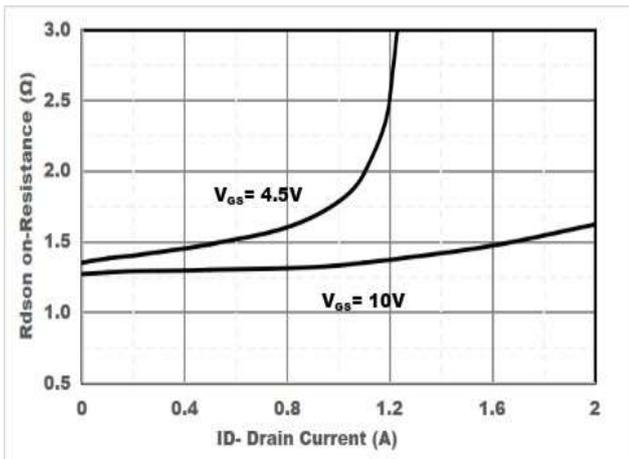


Figure5. Drain-Source on Resistance

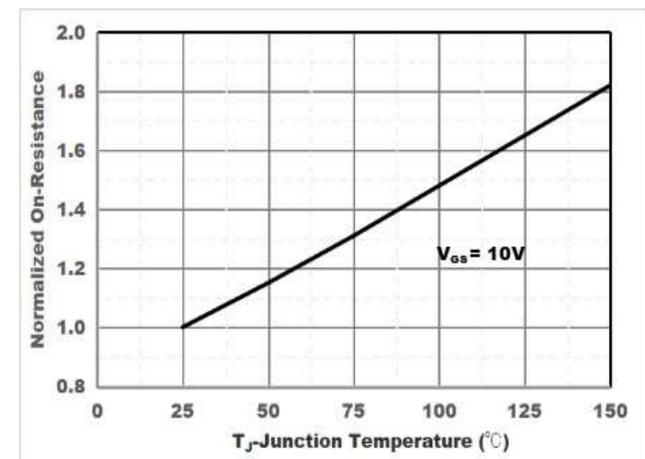


Figure6. Drain-Source on Resistance

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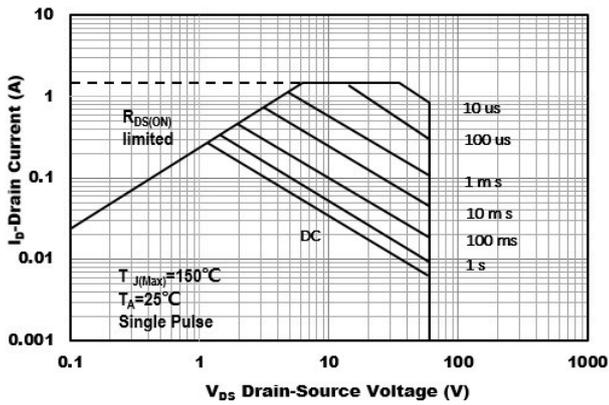


Figure7. Safe Operation Area

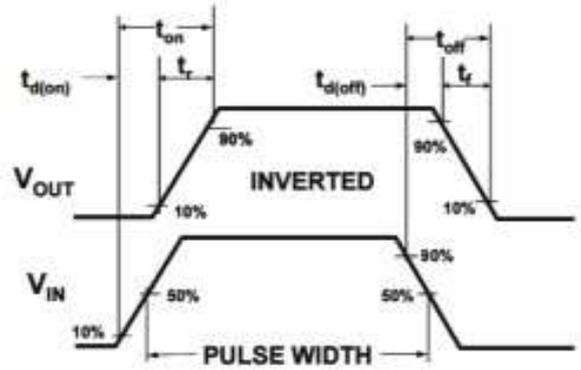
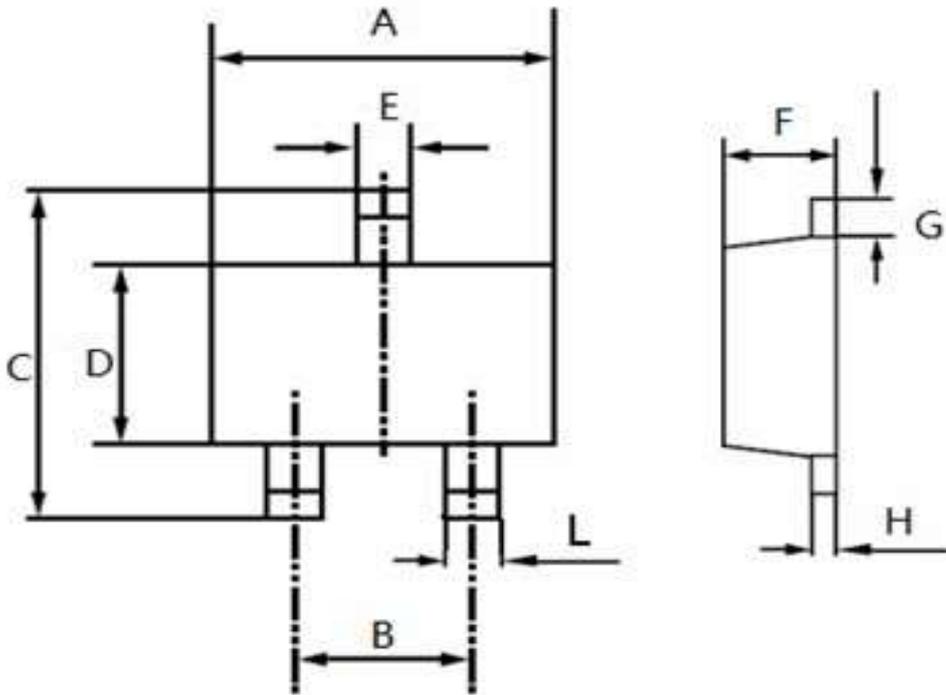


Figure8. Switching wave

SOT-723 Package information



Symbol	Dimensions In Millimeters	
	Min	Max
A	1.100	1.300
B	0.8typ	
C	1.100	1.300
D	0.700	0.900
E	0.200	0.300
F	0.400	0.500
G	0.150	0.250
H	0.060	0.160
L	0.150	0.250

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