

# DN3541KM

## DN3541KM N-Channel Enhancement Mode Field Effect Transistor

### General description

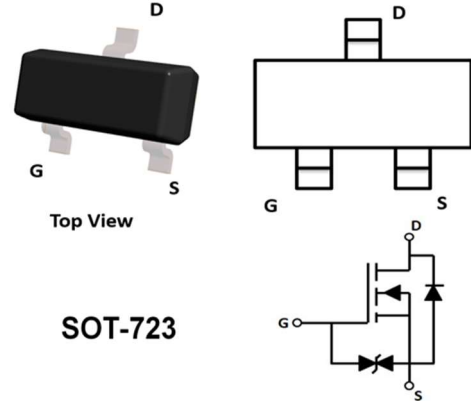
N-Channel Enhancement Mode Field Effect Transistor

### 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 <sub>DS</sub>	30	V
Gate-source Voltage	V <sub>GS</sub>	±20	V
Drain Current	I <sub>D</sub>	100	mA
Pulsed Drain Current <sup>A</sup>	I <sub>DM</sub>	1.5	A
Total Power Dissipation @ T <sub>A</sub> =25°C	P <sub>D</sub>	0.15	W
Thermal Resistance Junction-to-Ambient @ Steady State	R <sub>θJA</sub>	357	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~+150	°C

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## Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)

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

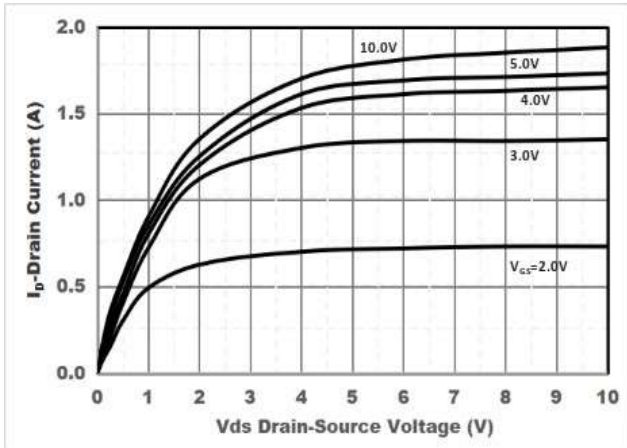


Figure1. Output Characteristics

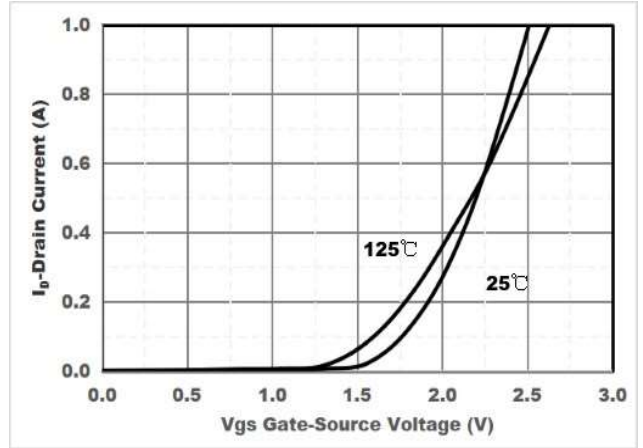


Figure2. Transfer Characteristics

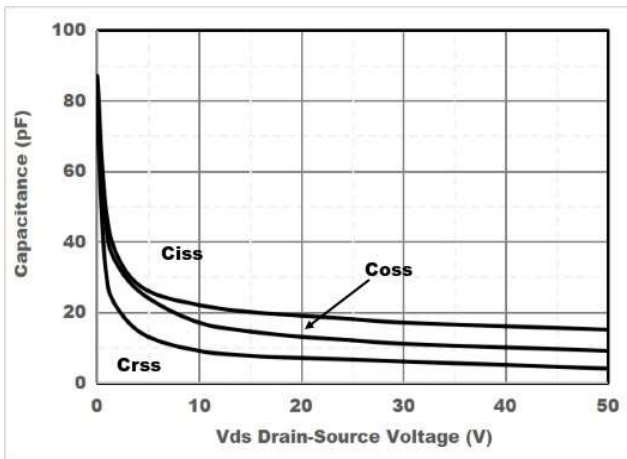


Figure3. Capacitance Characteristics

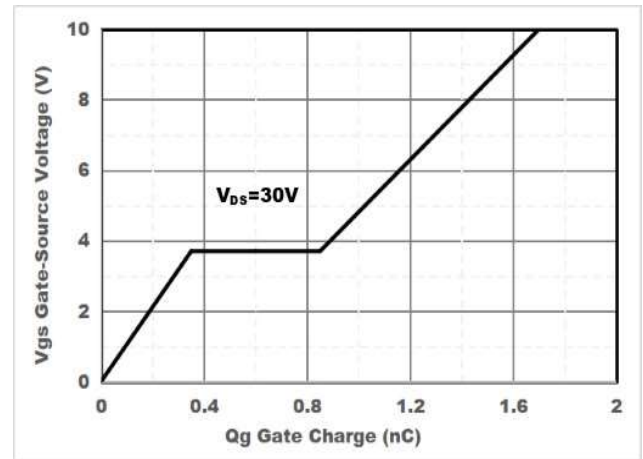


Figure4. Gate Charge

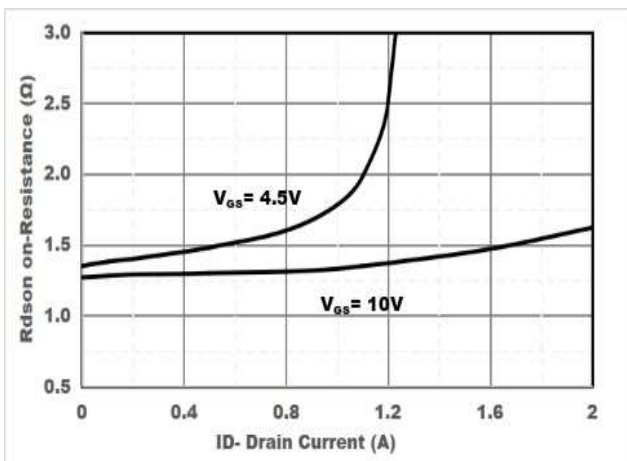


Figure5. Drain-Source on Resistance

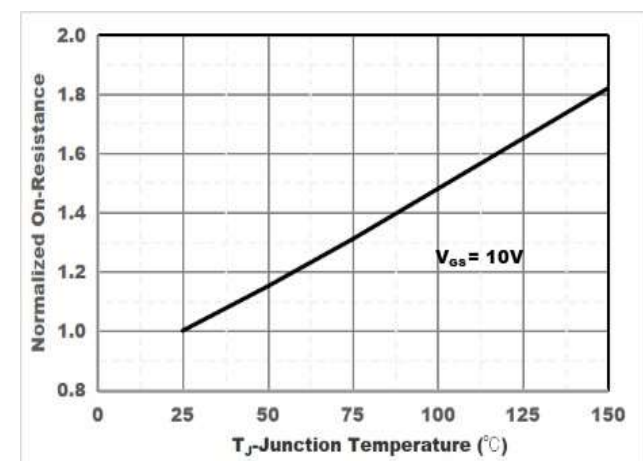


Figure6. Drain-Source on Resistance



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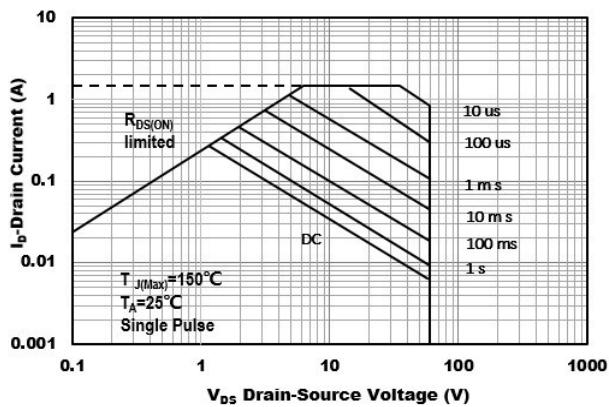


Figure7. Safe Operation Area

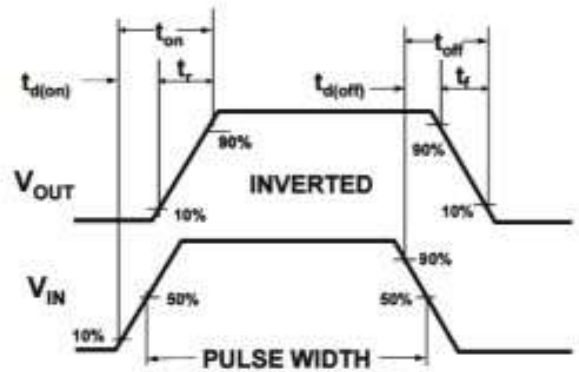
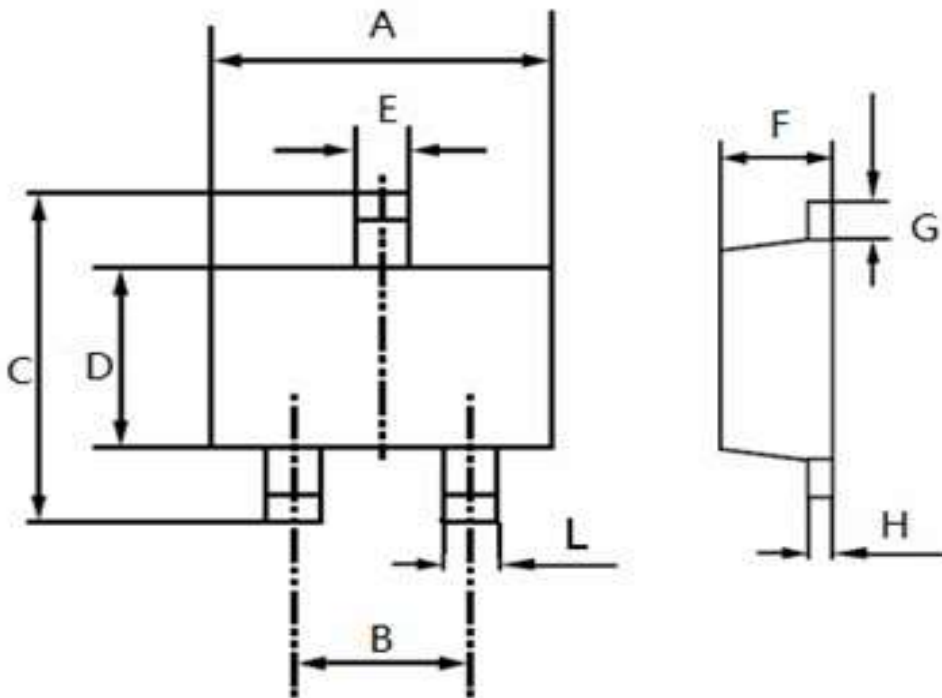


Figure8. Switching wave

## 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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