

Features

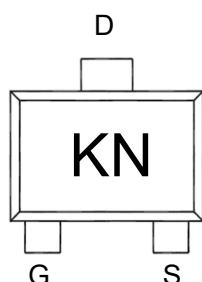
- Low on-resistance
- Fast switching speed
- Easily designed drive circuits
- Easy to parallel Portable equipment

Application

- Interfacing, Switching

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
50V	5Ω@10V	0.2A
	6Ω@4.5V	

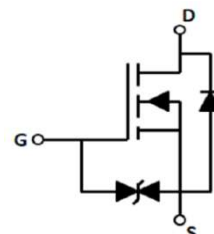


KN: Device code
N: Code

Marking and pin assignment



SOT-723 top view



Schematic diagram



Pb-Free



Halogen-Free

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

Symbol	Parameter	Rating	Unit
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Common Ratings (TC=25°C Unless Otherwise Noted)

V _{DS}	Drain-Source Breakdown Voltage		30	V
V _{GS}	Gate-Source Voltage		±20	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 155	°C
I _S	Diode Continuous Forward Current	Tc=25°C	0.2	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^{\circ}C$	0.78	A
I_D	Continuous Drain Current	$T_c=25^{\circ}C$	0.2	A
P_D	Maximum Power Dissipation	$T_c=25^{\circ}C$	0.15	W
ESD	Gate-Source ESD Rating (HBM, Method 3015)		2000	V

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
BSS138KM	SOT-723	KN	8,000	120,000	480,000	7"reel

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

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV(BR)DSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250μA	30	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=50V, VGS=0V	--	--	1	uA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±10	uA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	0.8	1.1	1.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=10mA	--	1.6	5.0	Ω
		VGS=4.5V, ID=1mA	--	2.0	6.0	Ω
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=30V, VGS=0V, f=1MHz	--	18	--	pF
COSS	Output Capacitance		--	12	--	pF
CRSS	Reverse Transfer Capacitance		--	7	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=50V, ID=0.2A, VGS=10V	--	1.7	--	nC
td(on)	Turn-on Delay Time	VDD=50V, ID=0.2A, VGS=4.5V, RG=10Ω	--	4.8	--	nS
td(off)	Turn-Off Delay Time		--	18	--	nS
trr	Reverse recovery Time	VGS=0V, IS=100mA, VR=25V, dIS/dt=-100A/μs	--	31	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25°C, Is=0.2A	--	--	1.2	V

Typical Operating Characteristics

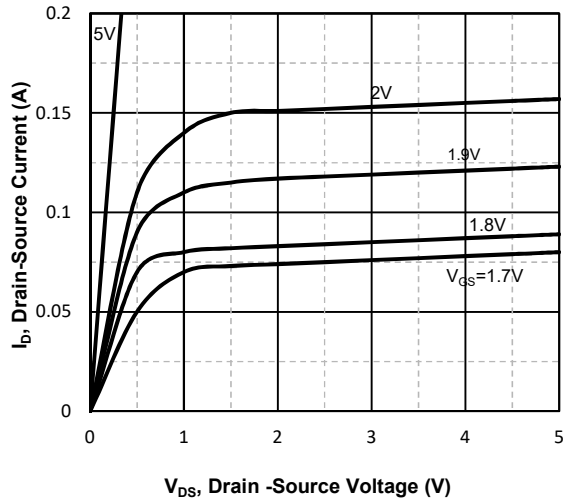


Fig1. Typical Output Characteristics

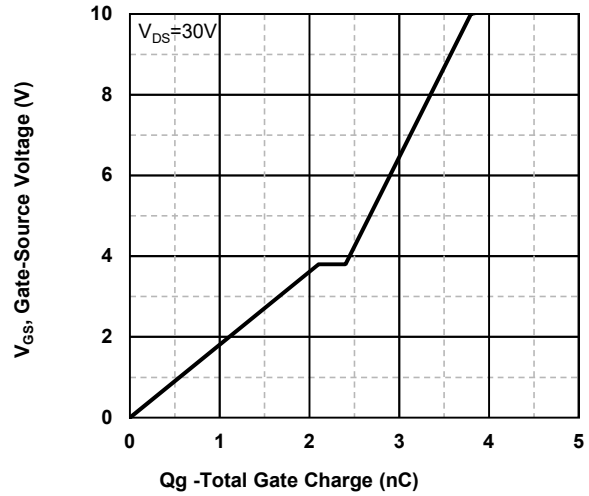


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

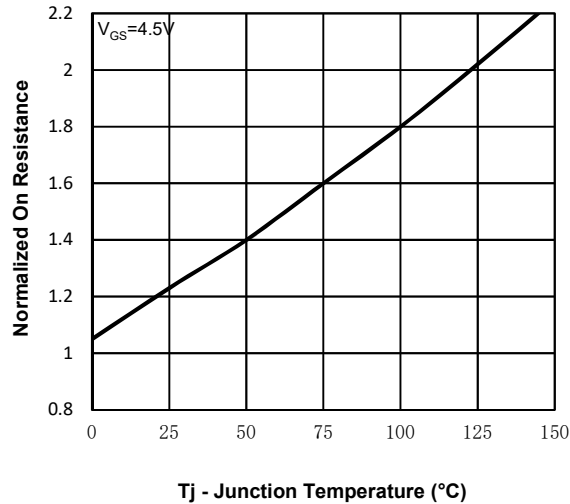


Fig3. Normalized On-Resistance Vs. Temperature

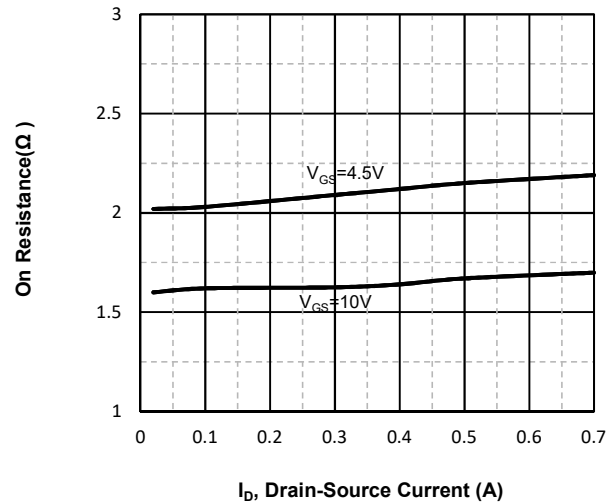


Fig4. On-Resistance Vs. Drain-Source Current

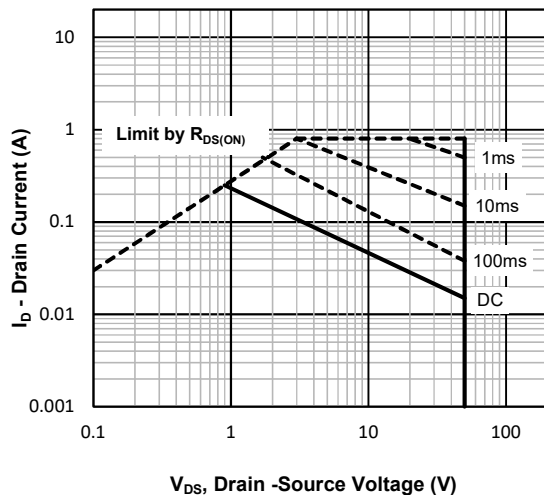


Fig5. Maximum Safe Operating Area

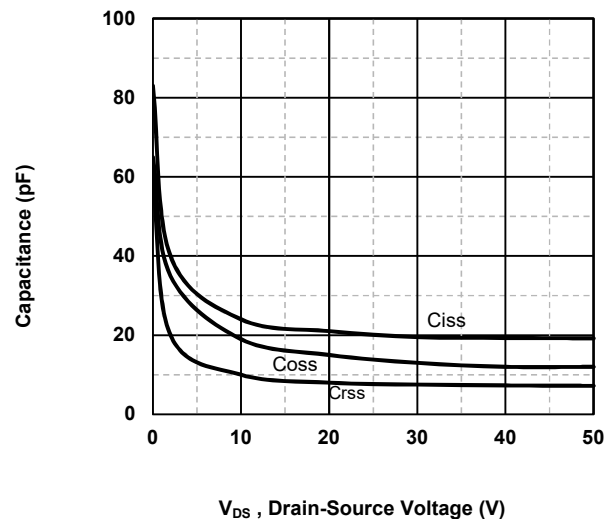
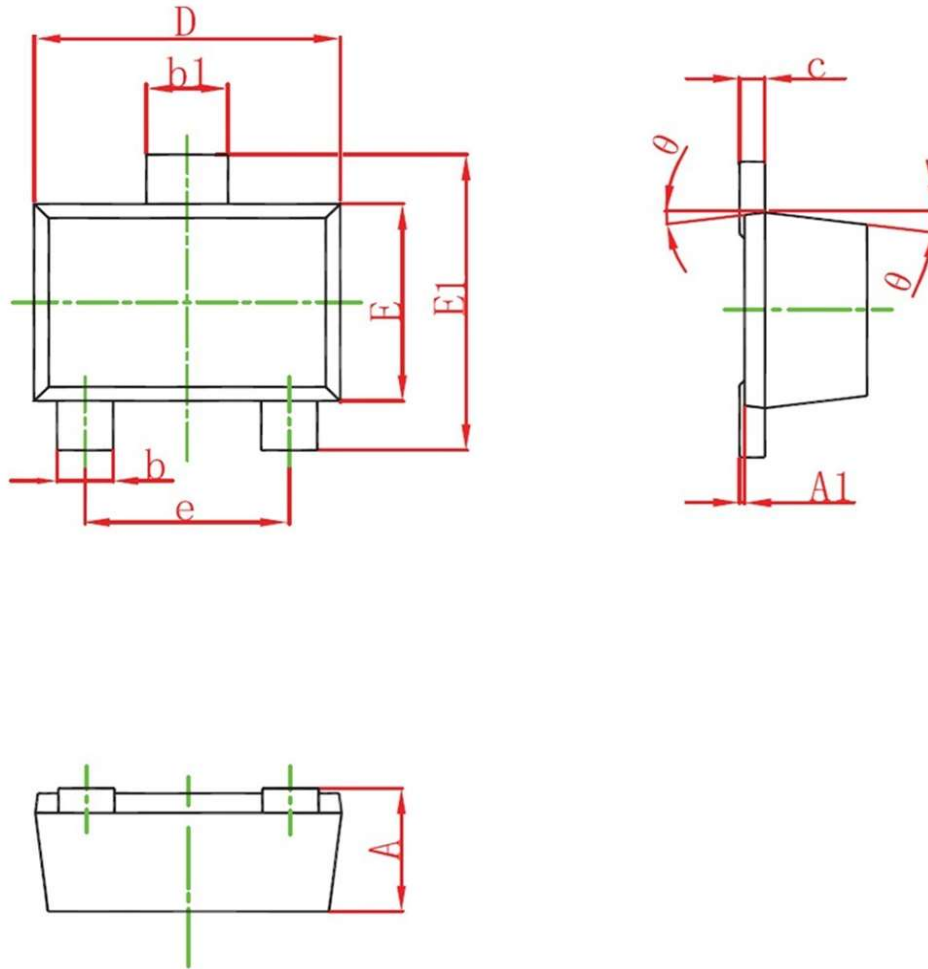


Fig6 Typical Capacitance Vs. Drain-Source

SOT-723 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.320	0.400	0.012	0.016
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.006	0.010
b1	0.270	0.370	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.046	0.050
E	0.750	0.850	0.030	0.034
E1	1.150	1.250	0.046	0.050
e	0.800TYP		0.020TYP	
θ	7°REF		7°REF	