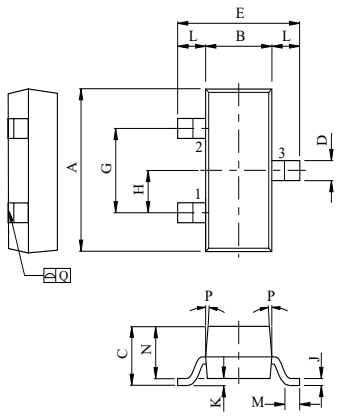
KMA3D0N20SA

N-Ch Trench MOSFET

General Description

This Trench MOSFET has better characteristics, such as fast switching time, low on resistance, low gate charge and excellent avalanche characteristics. It is mainly suitable for portable equipment.



DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20/-0.15
C	1.30 MAX
D	0.40+0.15/-0.05
E	2.40+0.30/-0.20
G	1.90
H	0.95
J	0.13+0.10/-0.05
K	0.00 ~ 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20/-0.10
P	7°
Q	0.1 MAX

SOT-23

FEATURES

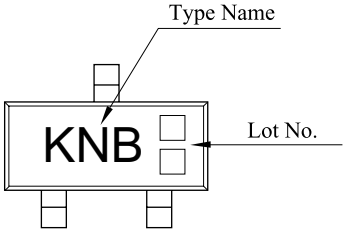
- V_{DSS}=20V, I_D=3A
- Drain to Source on-state Resistance
  $R_{DS(ON)}$=55mΩ(Max.) @ V_{GS}=4.5V
  $R_{DS(ON)}$=110mΩ(Max.) @ V_{GS}=2.5V
- Super Hige Dense Cell Design

MAXIMUM RATING (Ta=25℃)

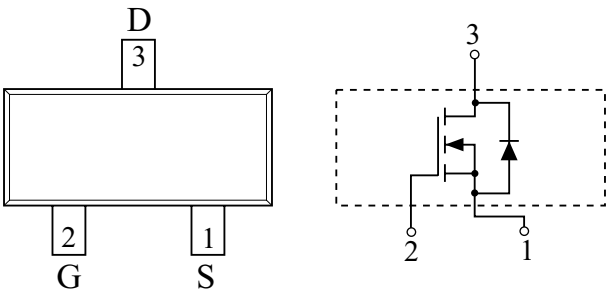
CHARACTERISTIC		SYMBOL	N-Ch	UNIT
Drain to Source Voltage		V_{DSS}	20	V
Gate to Source Voltage		V_{GSS}	±12	V
Drain Current	DC@T_a=25℃ (Note1)	I_D	3	A
	Pulsed (Note1)	I_{DP}	12	
Drain Power Dissipation	T_a=25℃ (Note1)	P_D	1.25	W
	T_a=70℃ (Note1)		0.8	
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 150	℃
Thermal Resistance, Junction to Ambient (Note1)		R_{thJA}	100	℃/W

Note1) Surface Mounted on 1 ″×1 ″FR4 Board, t≤5sec.

Marking



PIN CONNECTION (TOP VIEW)



ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain to Source Breakdown Voltage	BV_{DSS}	I_{DS}=250 μA, V_{GS}=0V,	20	-	-	V
Drain Cut-off Current	I_{DSS}	V_{GS}=0V, V_{DS}=16V	-	-	1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±10V, V_{DS}=0V	-	-	±100	nA
Gate to Source Threshold Voltage	V_{th}	V_{DS}=V_{GS}, I_D=250 μA	0.5	0.8	1.5	V
Drain to Source On Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=2.5A (Note2)	-	38	55	mΩ
		V_{GS}=2.5V, I_D=1A (Note2)	-	55	110	
On State Drain Current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V (Note2)	12	-	-	A
Forward Transconductance	g_{fs}	V_{DS}=5V, I_D=2.5A (Note2)	-	6	-	S
Dynamic						
Input Capaclitance	C_{iss}	V_{DS}=10V, V_{GS}= 0V, f=1MHz	-	280	-	pF
Ouput Capacitance	C_{oss}		-	64	-	
Reverse Transfer Capacitance	C_{rss}		-	34	-	
Total Gate Charge	Q_g	V_{DS}=10V, V_{GS}=4.5V, I_D=2.5A (Note2)	-	4.0	-	nC
Gate to Source Charge	Q_{gs}		-	0.9	-	
Gate to Drain Charge	Q_{gd}		-	0.9	-	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=10V, V_{GS}=4.5V, I_D=1A, R_G=6Ω (Note2)	-	6.3	-	ns
Turn-On Rise Time	t_r		-	7.0	-	
Turn-Off Delay Time	$t_{d(off)}$		-	7.3	-	
Turn-Off Fall Time	t_f		-	6.2	-	
Source-Drain Diode Ratings						
Continuous Source Current	I_S	-	-	-	3.0	A
Pulsed Source Current	I_{SP}	- (Note2)	-	-	12	A
Source to Drain Forward Voltage	V_{SDF}	V_{GS}=0V, I_S=1.25A	-	-	1.2	V

NOTE 2) Pulse Test : Pulse width <300μs , Duty cycle < 2%

Fig1. I_D - V_{DS}

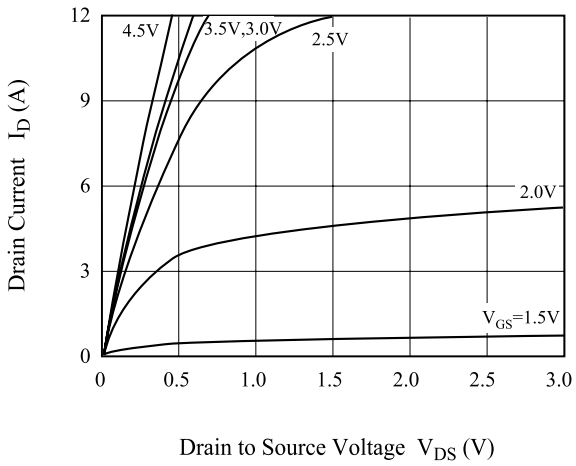


Fig2. $R_{DS(on)}$ - I_D

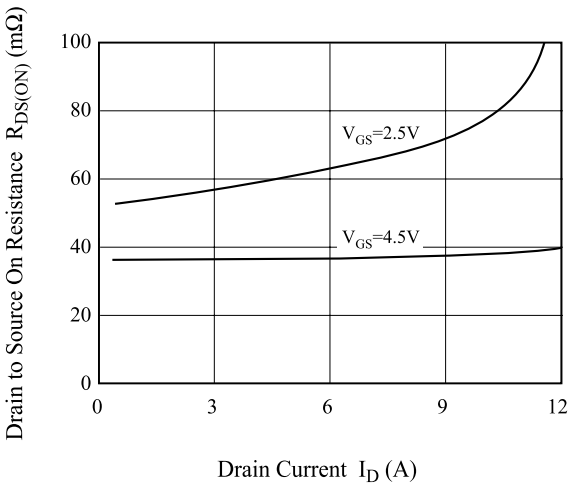


Fig3. I_D - V_{GS}

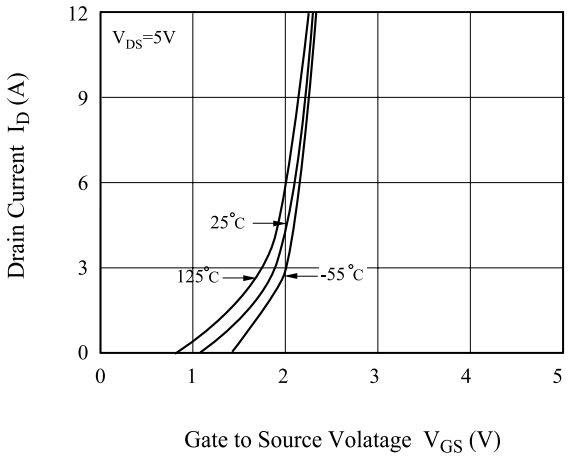


Fig4. $R_{DS(on)}$ - T_j

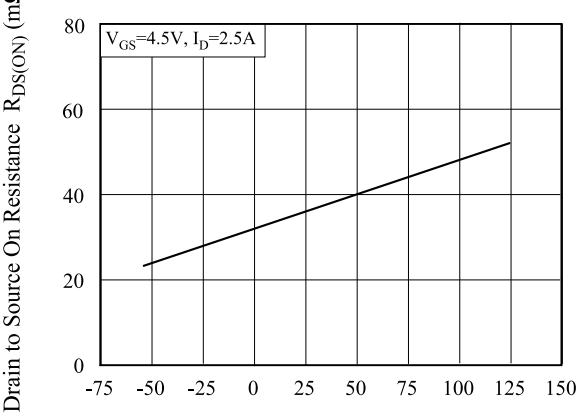


Fig5. V_{th} - T_j

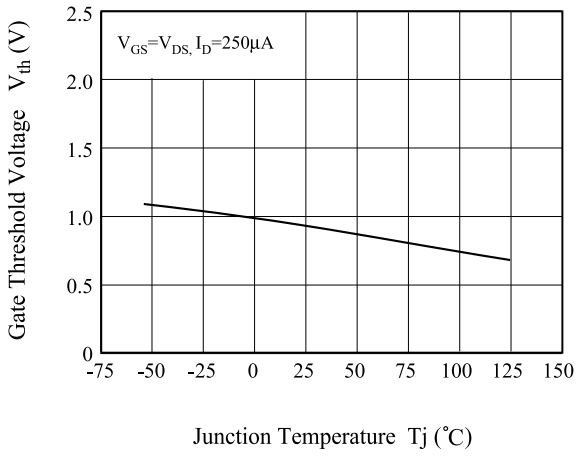


Fig6. I_S - V_{SDF}

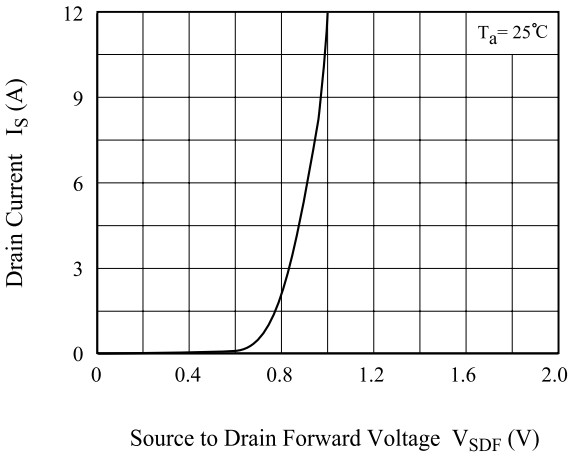


Fig7. C - V_{DS}

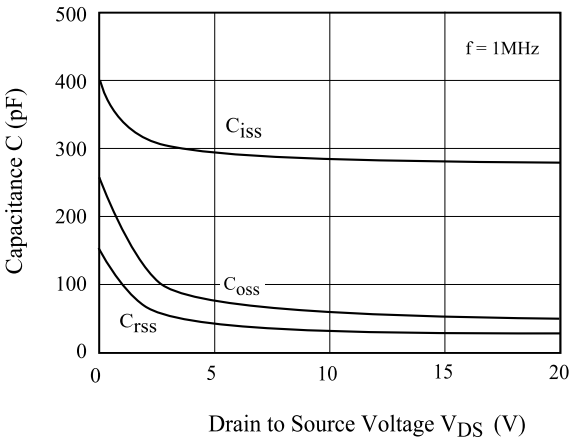


Fig8. Q_g - V_{GS}

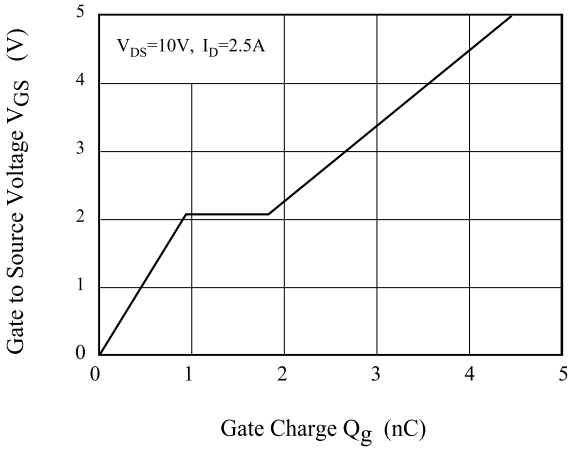


Fig9. Safe Operation Area

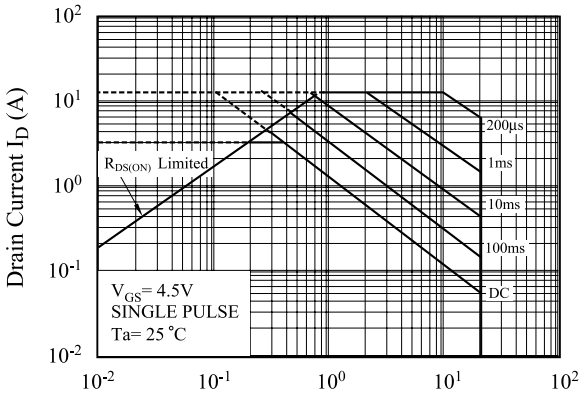
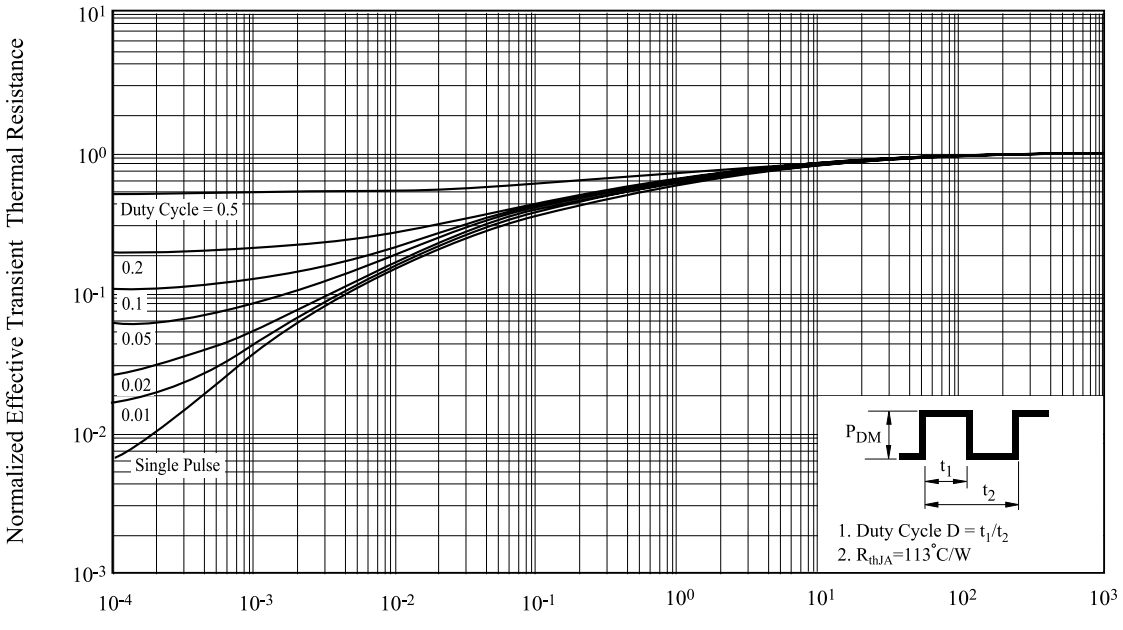


Fig10. Transient Thermal Response Curve



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by KEC ***manufacturer:***

Other Similar products are found below :

614233C 648584F MCH3443-TL-E MCH6422-TL-E FDPF9N50NZ FW216A-TL-2W FW231A-TL-E APT5010JVR NTNS3A92PZT5G IRF100S201 JANTX2N5237 2SK2464-TL-E 2SK3818-DL-E FCA20N60_F109 FDZ595PZ STD6600NT4G FSS804-TL-E 2SJ277-DL-E 2SK1691-DL-E 2SK2545(Q,T) 405094E 423220D MCH6646-TL-E TPCC8103,L1Q(CM 367-8430-0972-503 VN1206L 424134F 026935X 051075F SBVS138LT1G 614234A 715780A NTNS3166NZT5G 751625C 873612G IRF7380TRHR IPS70R2K0CEAKMA1 RJK60S3DPP-E0#T2 RJK60S5DPK-M0#T0 APT5010JVFR APT12031JFLL APT12040JVR DMN3404LQ-7 NTE6400 JANTX2N6796U JANTX2N6784U JANTXV2N5416U4 SQM110N05-06L-GE3 SIHF35N60E-GE3 2SK2614(TE16L1,Q)