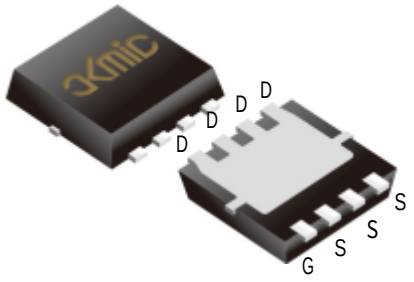
Description:

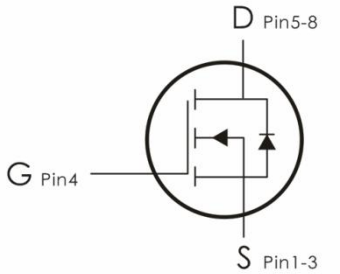
This N-Channel MOSFET uses advanced Trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features:

1) V_{DS}=40V,I_D=100A,$R_{DS(ON)}$<3mΩ @V_{GS}=10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.



Absolute Maximum Ratings: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current T_C = 25℃	100	A
	Continuous Drain Current T_C = 100℃	65	
I_{DM}	Pulsed Drain Current[1]	400	
E_{AS}	Single Pulse Avalanche Energy[2]	150	mJ
P_D	Power Dissipation	61	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\Theta JC}$	Thermal Resistance,Junction to Case[2]	2	℃/W

Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
NTMFS5832NLT1G-AK	AKMic	DFN5*6-8	5000 pcs/Reel

Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	40	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=40V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1	1.6	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance[3]	V_{GS}=10V,I_D=30A	---	2.3	3	mΩ
		V_{GS}=4.5V,I_D=20A	---	3.1	4	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=20V, V_{GS}=0V, f=1MHz	---	5594	---	pF
C_{oss}	Output Capacitance		---	410	---	
C_{rss}	Reverse Transfer Capacitance		---	339	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=20V,I_D=30A, R_G=3Ω,V_{GS}=10V	---	11	---	ns
t_r	Rise Time		---	15	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	38	---	ns
t_f	Fall Time		---	14	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=20V, I_D=30A	---	64	---	nC
Q_{gs}	Gate-Source Charge		---	12.4	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	14	---	nC
Drain-Source Diode Characteristics						
Symbol	**Parameter**	**Conditions**	**Min**	**Typ**	**Max**	**Units**
V_{SD}	Source-Drain Diode Forward Voltage	V_{GS}=0V,I_S=20A	---	---	1.2	V
I_S	Continuous Drain Current	VD=VG=0V	---	---	100	A
I_{SM}	Pulsed Drain Curren	VD=VG=0V	---	---	400	A
Qrr	Reverse Recovery Charge	I_{DS} = 30 A, V_{GS} = 0 V	---	22	---	nC
Trr	Reverse Recovery Time	dI_{SD}/dt = 100 A/μs	---	11	---	ns

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. EAS condition: T_J=25℃, V_{DD}=20V, V_G=10V, R_G=25Ω, L=0.5mH, I_{AS}=24.5A
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics: (T_C=25℃ unless otherwise noted)

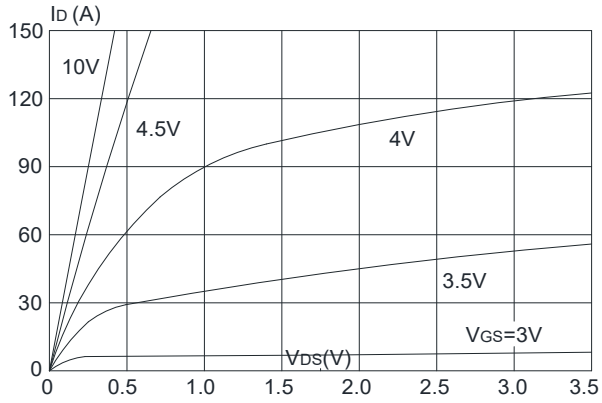


Figure1: Output Characteristics

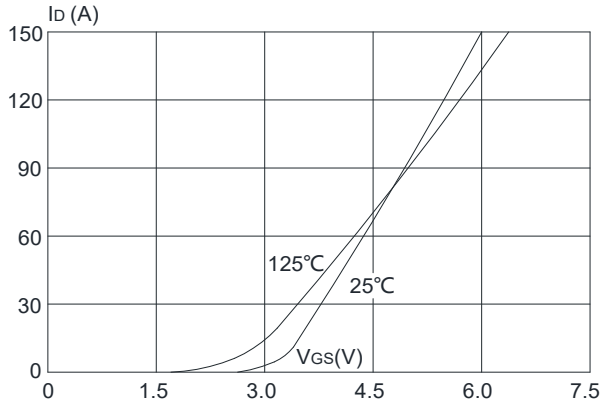


Figure 2: Typical Transfer Characteristics

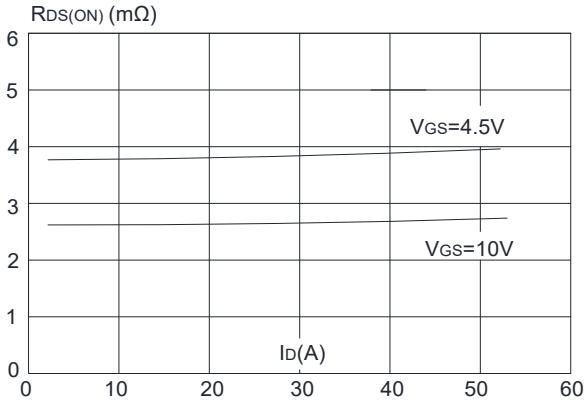


Figure 3: On-resistance vs. Drain Current

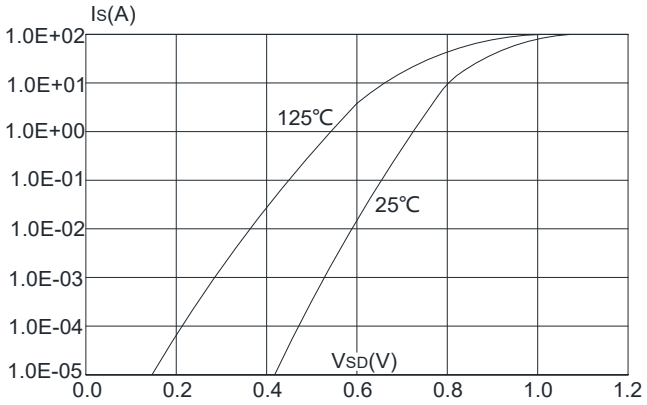


Figure 4: Body Diode Characteristics

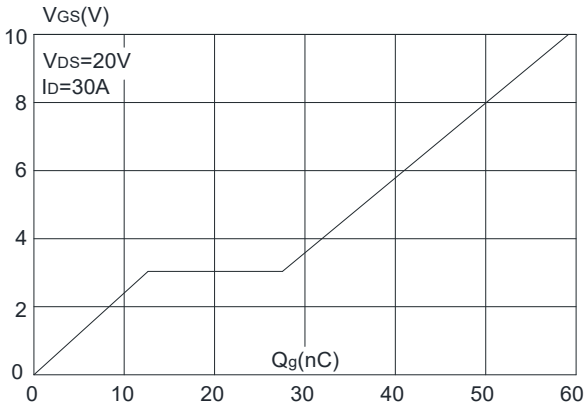


Figure 5: Gate Charge Characteristics

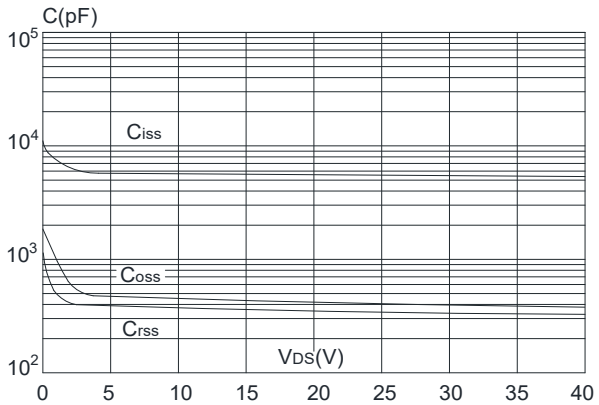


Figure 6: Capacitance Characteristics

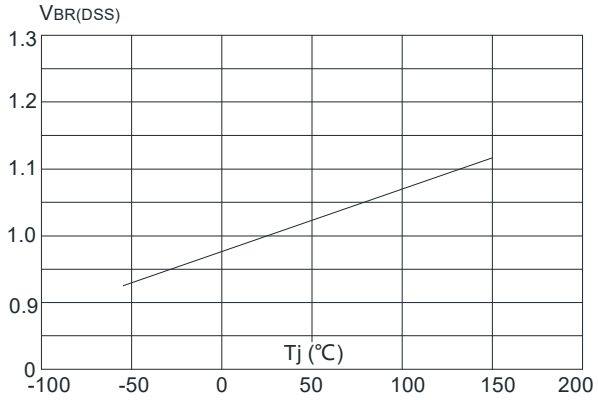


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

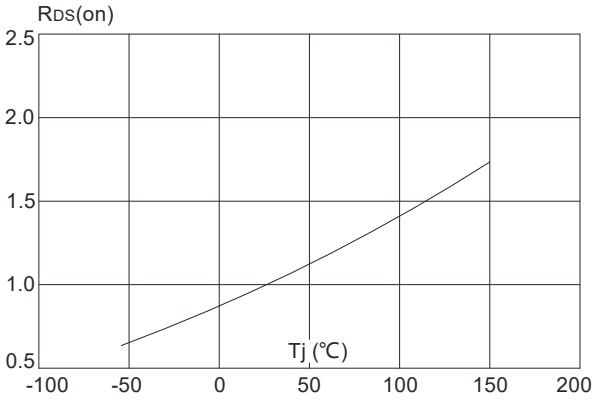


Figure 8: Normalized on Resistance vs. Junction Temperature

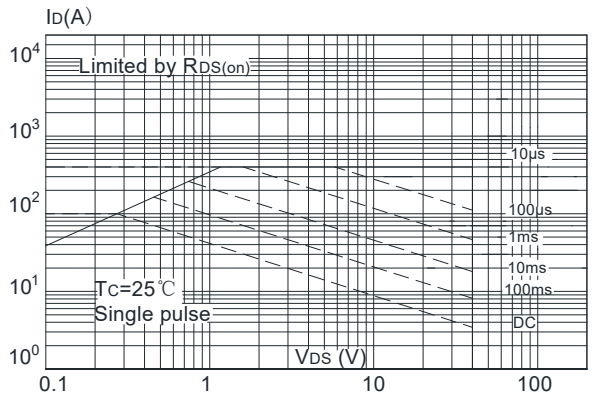


Figure 9: Maximum Safe Operating Area

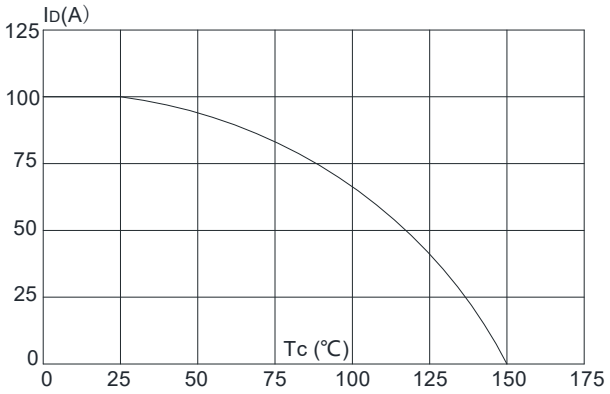


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

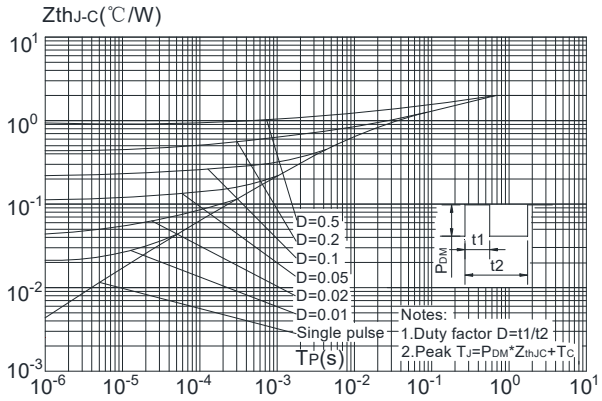


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

DFN5×6-8 Package Information：

