

20V N-Channel Enhancement Mode MOSFET

VDS= 20V

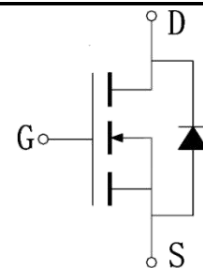
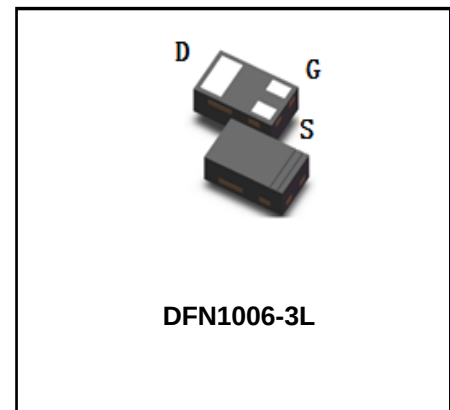
RDS(ON), Vgs@ 4.5V, Ids@ 2.3A <55.0mΩ

RDS(ON), Vgs@ 2.5V, Ids@ 2.0A < 65.0mΩ

Features

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance



Absolute Max Ratings at Ta=25°C

Parameter	Symbol	Maximum	Units
Drain to Source Voltage	V _{DSS}	20	V
Gate to Source Voltage	V _{GSS}	±12	V
Drain Current (DC)	I _D	2.3	A
Drain Current (Pulse), PW≤300μs	I _{DP}	11	A
Total Dissipation	P _D	0.77	W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

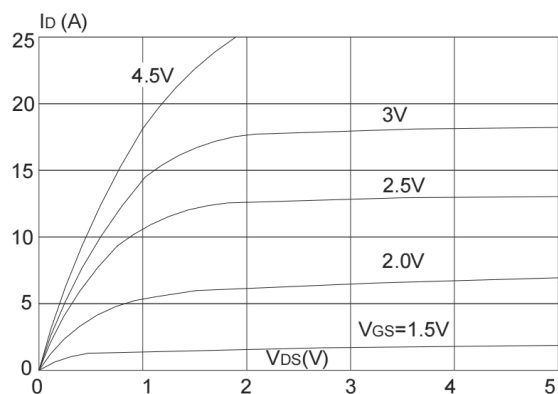
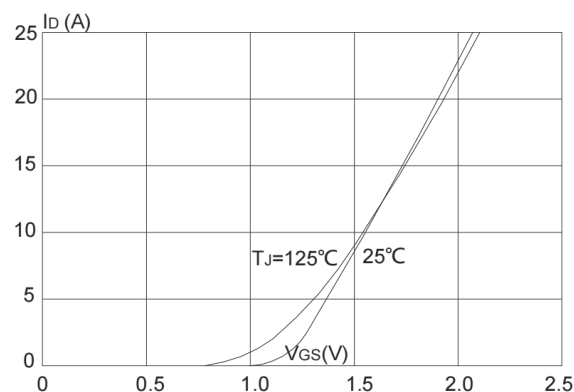
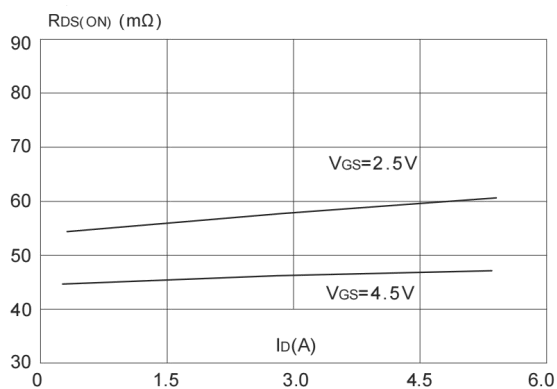
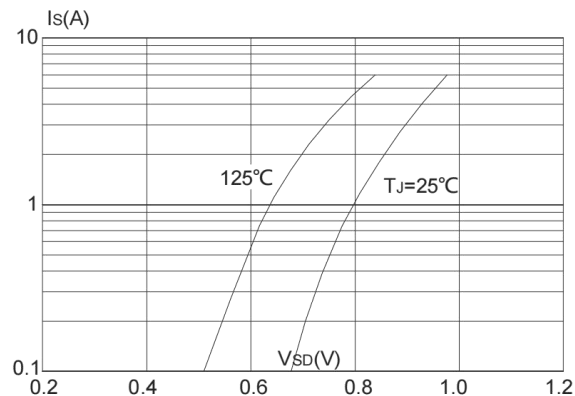
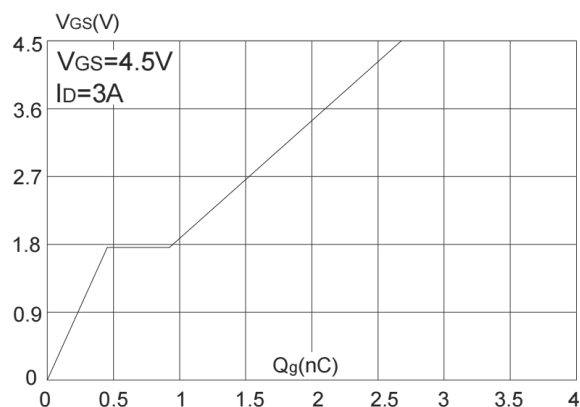
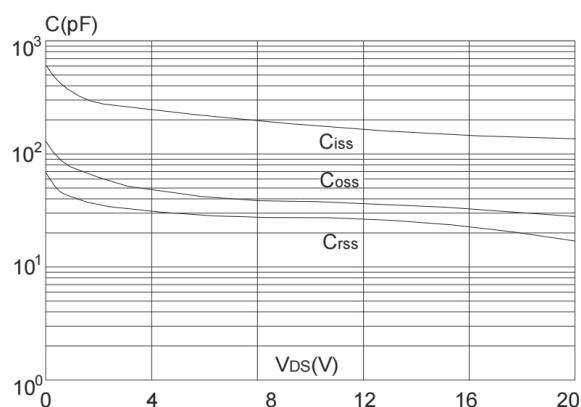
Note 1: Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Model	Marking	Package	shipping
AM20NN023TC		DFN1006-3L	10000/Tape&Reel

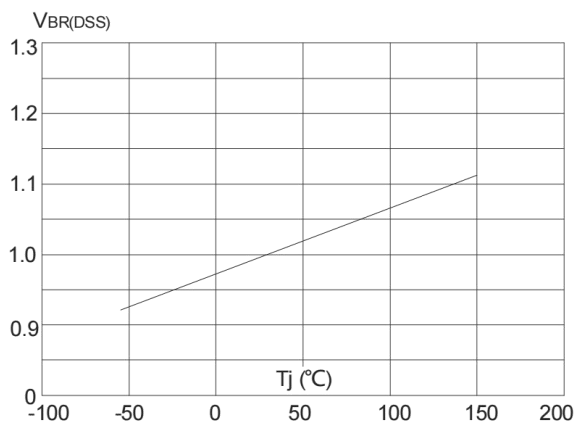
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 250\mu A, V_{GS} = 0V$	20	22		V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	0.5	0.7	1.2	V
Static Drain to Source On-State Resistance	$R_{DS(on)}$	$I_D = 2.3A, V_{GS} = 4.5V$		47	55	m Ω
		$I_D = 2A, V_{GS} = 2.5V$		58	65	m Ω
Input Capacitance	C_{iss}	$V_{GS}=0V,$ $V_{DS}=10V,$ Frequency=1.0MHz		184		pF
Output Capacitance	C_{oss}			38		pF
Reverse Transfer Capacitance	C_{rss}			28		pF
Turn-ON Delay Time	$t_{d(on)}$	$V_{DD} = 10V, I_D = 2.3A,$ $R_G = 3\Omega, V_{GS} = 4.5V$		8		ns
Rise Time	t_r			27		ns
Turn-OFF Delay Time	$t_{d(off)}$			26		ns
Fall Time	t_f			33		ns
Total Gate Charge	Q_g	$V_{DS} = 10V,$ $V_{GS} = 4.5V,$ $I_D = 2.3A$		2.7		nC
	Q_{gs}			0.4		nC
	Q_{gd}			0.5		nC
Diode Forward Voltage	V_{FSD}	$I_D = 2.3A, V_{GS} = 0$		0.9	1.2	V

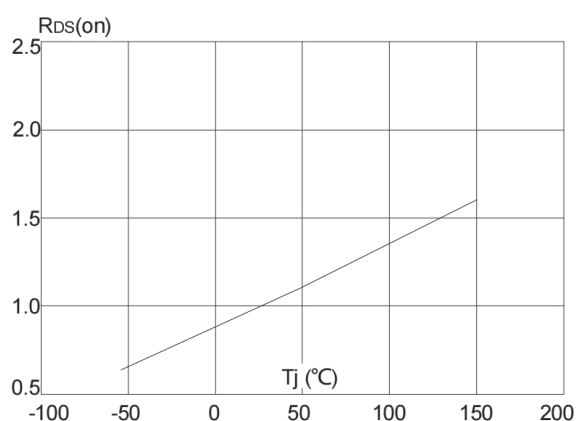
Note 3 : Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Electrical Characteristic Curve

Output Characteristics

Typical Transfer Characteristics

On-resistance vs . Drain Current

Body Diode Characteristics

Gate Charge Characteristics

Capacitance Characteristics

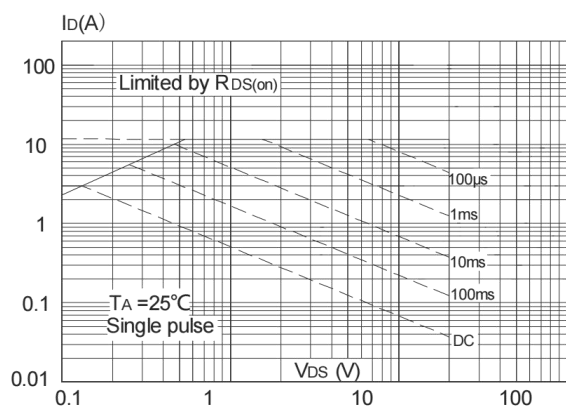
Electrical Characteristic Curve



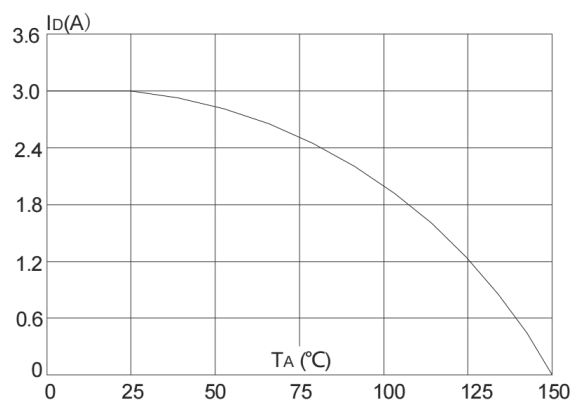
Normalized Breakdown Voltage vs .
Junction Temperature



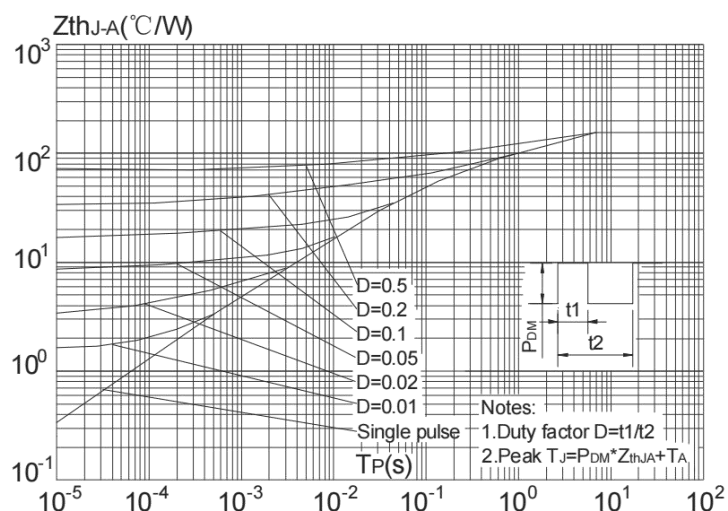
Normalized on Resistance vs .
Junction Temperature



Maximum Safe Operating Area

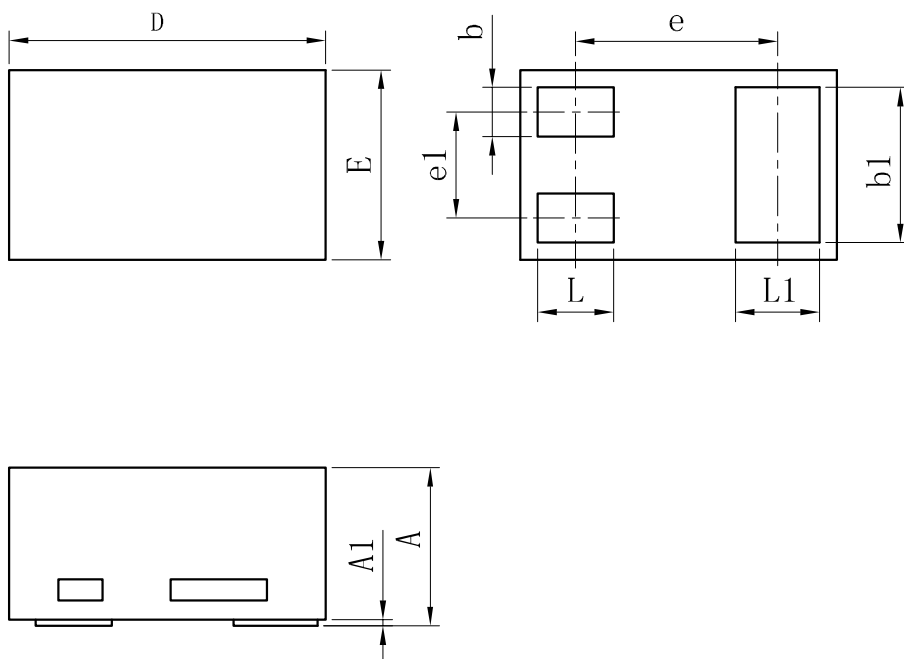


Maximum Continuous Drain Current vs.
Case Temperature



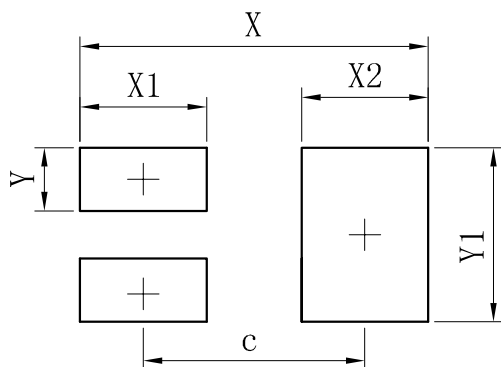
Maximum Continuous Drain Current vs.
Case Temperature

Dimension outline Unit:mm



DFN1006-3L			
Dim	Min	Typ	Max
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	–	0.64	–
e1	–	0.34	–
L	0.19	0.24	0.29
L1	0.22	0.27	0.32
b	0.10	0.15	0.20
b1	0.44	0.49	0.54
A	0.43	0.48	0.53
A1	0	–	0.05

Recommended Mounting Pad Layout Unit:mm



Dimensions	(mm)
c	0.70
X	1.10
X1	0.40
X2	0.40
Y	0.20
Y1	0.55