

DN2070D

20V N-Channel Enhancement-Mode MOSFET

1. FEATURES

- VDS= 20V
- RDS(ON), VGS@4.5V, IDS@2.8A = 60mΩ
- RDS(ON), VGS@2.5V, IDS@2A = 115mΩ
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
DN2070D	2DN	4000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25°C)

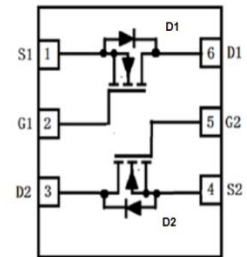
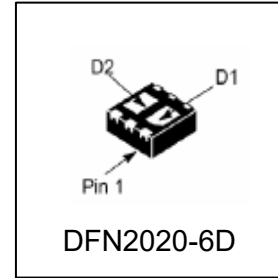
Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDS	20	V
Gate–to–Source Voltage	VGS	±12	V
Continuous Drain Current	ID	2.8	A
Pulsed Drain Current(Note 1)	IDM	12	

1. Repetitive Rating: Pulse width limited by the maximum junction temperature.

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	1.4	W
Thermal Resistance, Junction–to–Ambient(Note 2)	RθJA	140	°C/W
Junction and Storage temperature	TJ, Tstg	-55~+150	°C

2. 1-in² 2oz Cu PCB board.



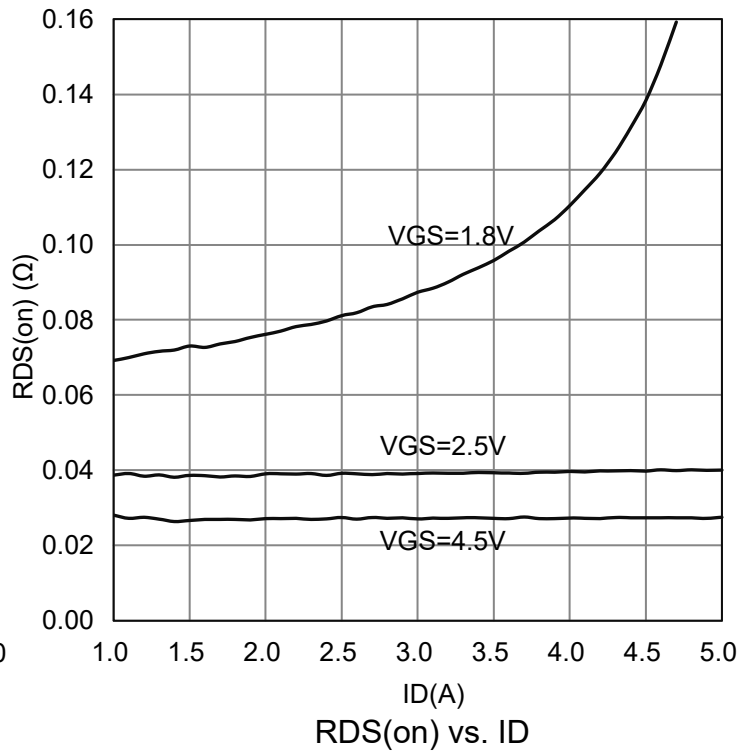
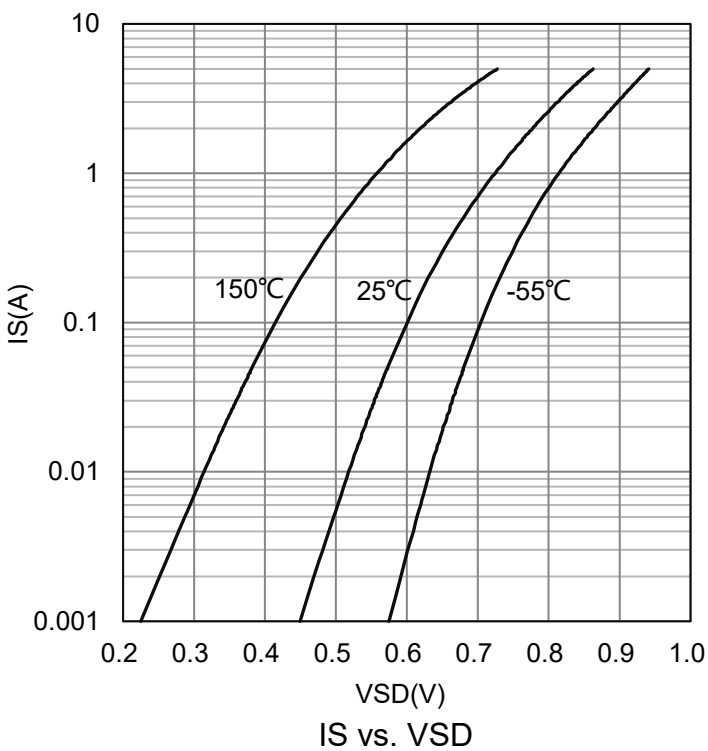
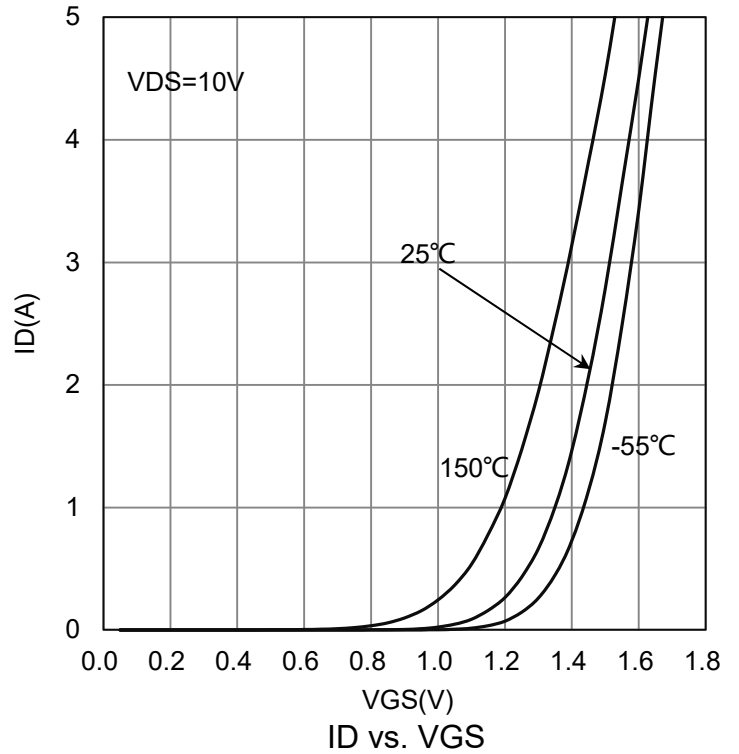
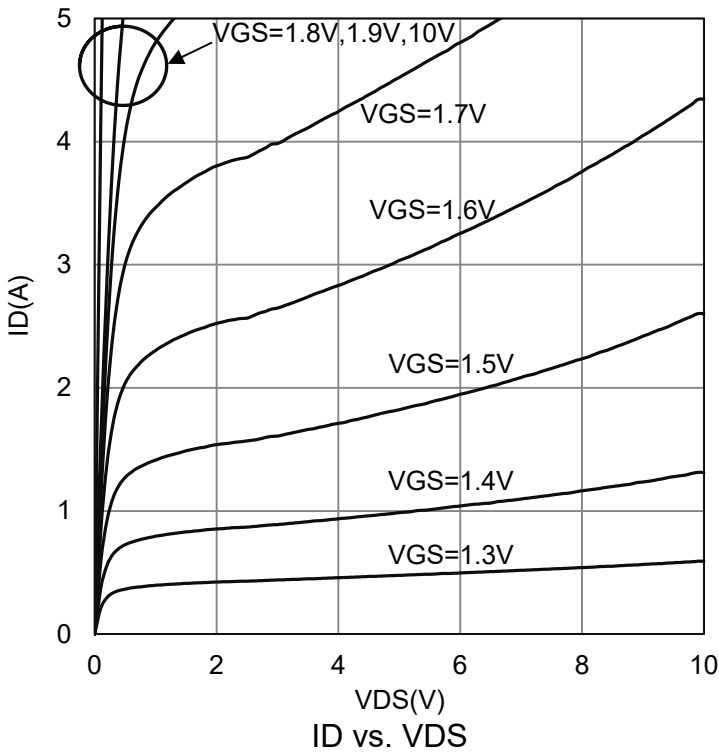
5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Drain-Source Breakdown Voltage (VGS = 0, ID = 250μA)	V(BR)DSS	20	-	-	V	
Zero Gate Voltage Drain Current (VDS = 20V, VGS = 0V)	IDSS	-	-	1	μA	
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μA)	VGS(th)	0.60	0.8	1.2	V	
Gate-Body Leakage Current (VDS = 0 V, VGS = ±12 V)	IGSS	-	-	±100	nA	
Drain-Source On-Resistance Resistance (VGS = 4.5V, ID = 2.8A) (VGS = 2.5V, ID = 2.0A)	RDS(on)	- -	34 44	60 115	mΩ	
DYNAMIC						
Total Gate Charge	(VDS = 10V, ID = 3.6A, VGS = 4.5V)	Qg	-	4.2	-	nC
Gate-Source Charge		Qgs	-	0.78	-	
Gate-Drain Charge		Qgd	-	1	-	
Turn-On Delay Time	(VDD = 15V, RL=5.5Ω, ID = 1A, VGEN = 4.5V, RG = 6Ω)	td(on)	-	13.8	-	ns
Rise Time		tr	-	9.6	-	
Turn-Off Delay Time		td(off)	-	29.8	-	
Fall Time		tf	-	7.2	-	
Input Capacitance	(VDS = 10 V, VGS = 0 V, f = 1 MHz)	Ciss	-	384.7	-	pF
Output Capacitance		Coss	-	51	-	
Reverse Transfer Capacitance		Crss	-	44	-	
Max. Diode Forward Current	IS	-	-	1.6	A	
Diode Forward Voltage (IS = 1.6A, VGS = 0V)	VSD	-	0.76	1.16	V	

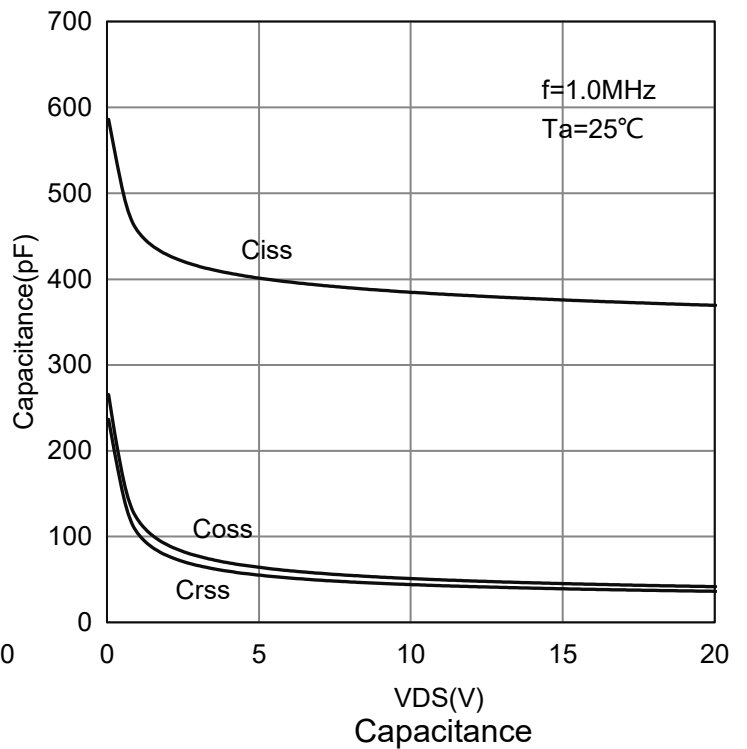
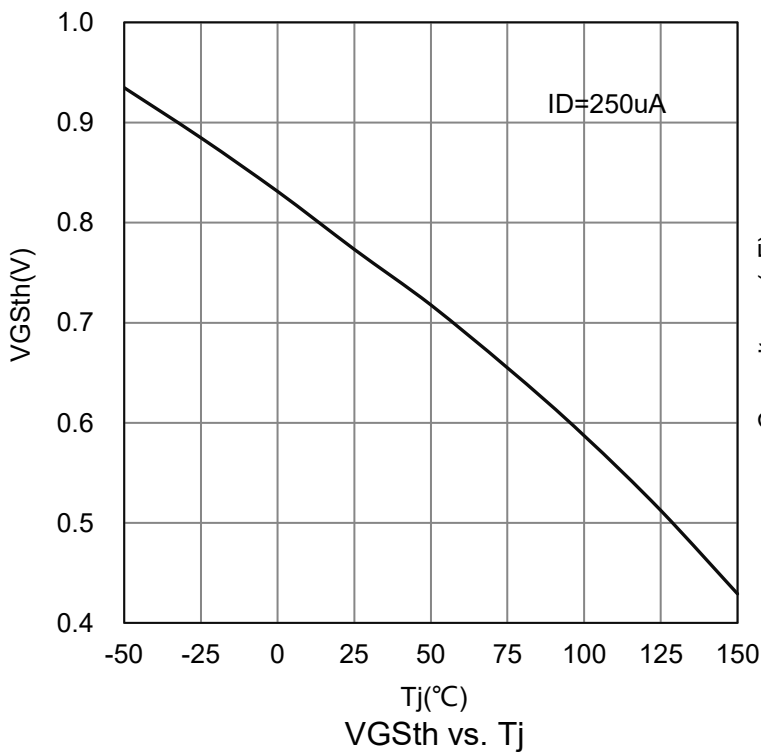
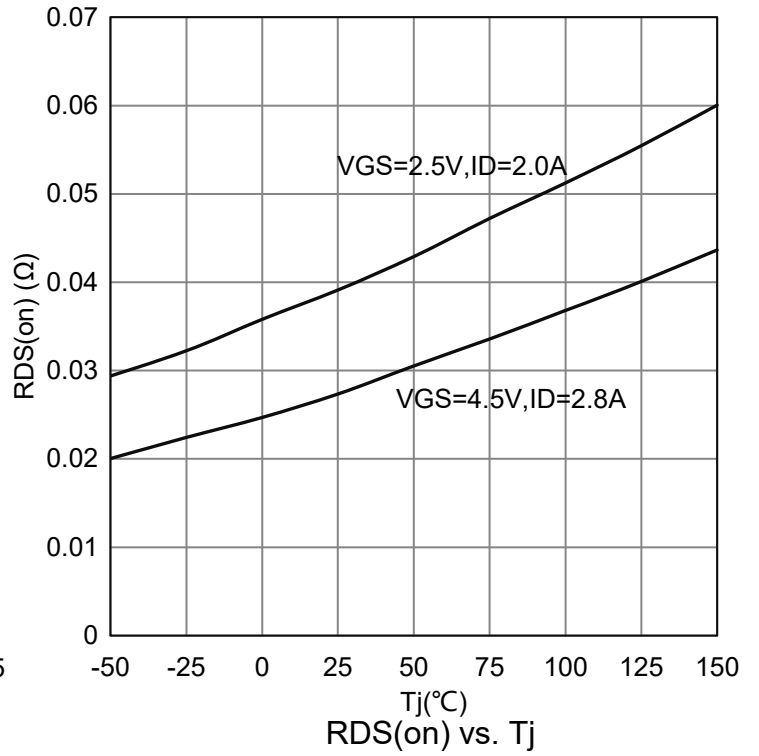
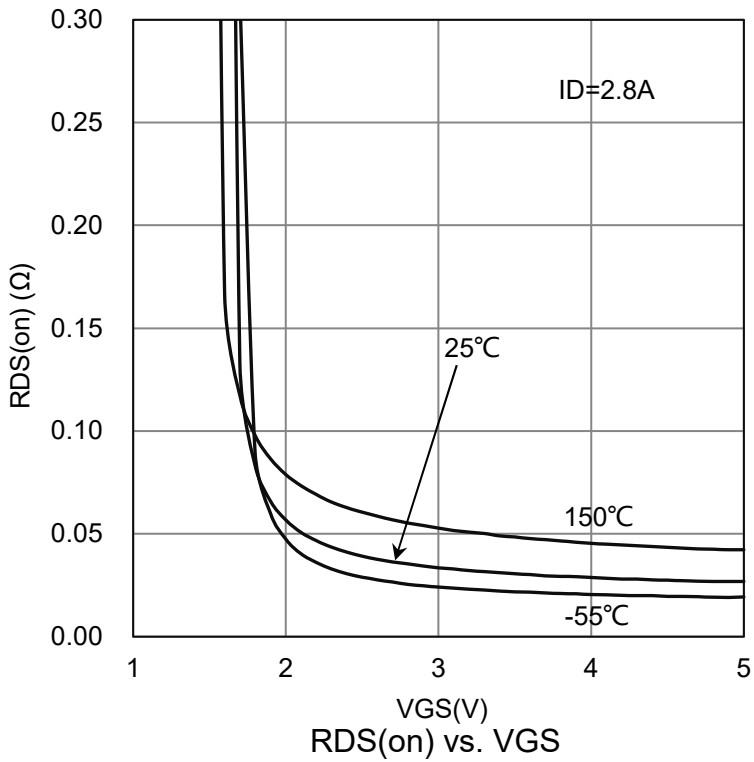
3. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.



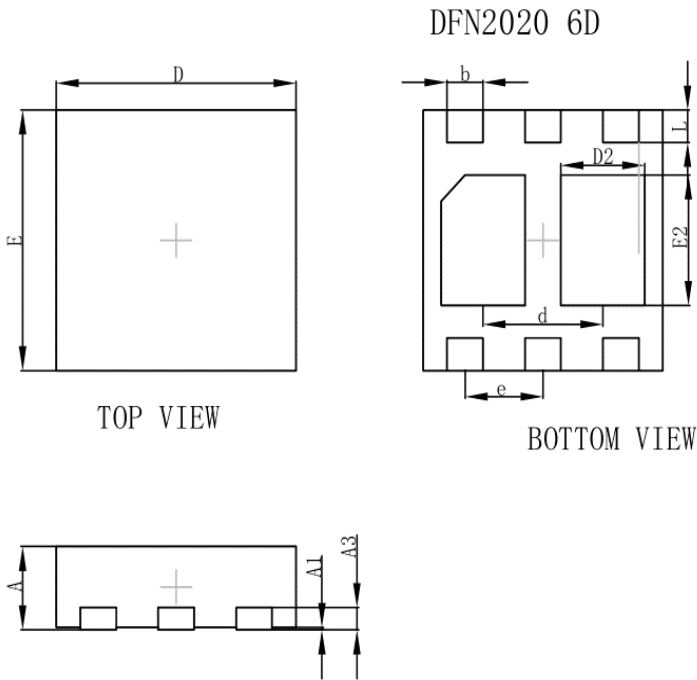
6.ELECTRICAL CHARACTERISTICS CURVES



6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

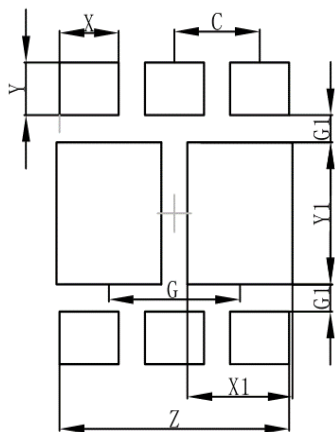


7.OUTLINE AND DIMENSIONS



DFN2020-6D			
Dim	Min	Typ	Max
D	1.95	2.00	2.05
E	1.95	2.00	2.05
e	-	0.65	-
L	0.20	0.25	0.30
b	0.25	0.30	0.35
d	-	1.00	-
A	0.60	0.65	0.70
A1	0.00	0.02	0.05
A3	-	0.152	-
E2	0.95	1.00	1.05
D2	0.65	0.70	0.75
All Dimensions in mm			

8.SOLDERING FOOTPRINT



Dimensions	(mm)
X	0.45
Y	0.37
X1	0.80
Y1	1.00
C	0.65
G	1.00
G1	0.19
Z	1.75

