

# LDP2013DT1G

## 20V P-Channel Enhancement-Mode MOSFET

### 1. FEATURES

- $V_{DS} = -20V$
- $R_{DS(ON)}, V_{GS}@-4.5V, I_{DS}@-2A \leq 100m\Omega$
- $R_{DS(ON)}, V_{GS}@-2.5V, I_{DS}@-1.8A \leq 130m\Omega$
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

### 2. APPLICATIONS

- Simple drive requirement
- Small package outline
- Surface mount device

### 3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LDP2013DT1G	DP3	4000/Tape&Reel

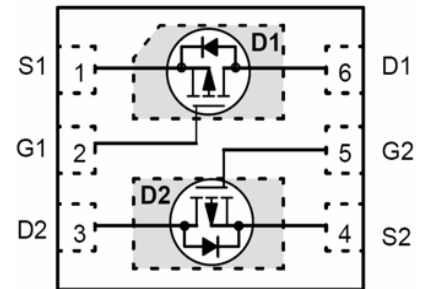
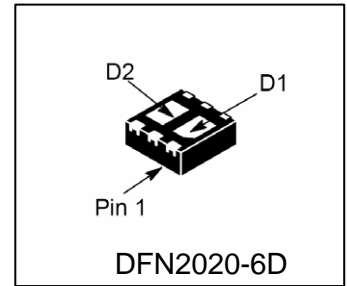
### 4. MAXIMUM RATINGS( $T_a = 25^\circ C$ )

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-to-Source Voltage – Continuous	$V_{GS}$	$\pm 12$	V
Drain Current			
– Continuous $T_a = 25^\circ C$	$I_D$	-3	A
– Pulsed (Note 1)	$I_{DM}$	-12	

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Power Dissipation	PD	1.4	W
Thermal Resistance, Junction-to-Ambient(Note 2)	$R_{\theta JA}$	85	$^\circ C/W$
Junction and Storage temperature	$T_J, T_{stg}$	$-55 \sim +150$	$^\circ C$

- 1.Repetitive Rating: Pulse width limited by the maximum junction temperature.
- 2.1-in<sup>2</sup> 2oz Cu PCB board.

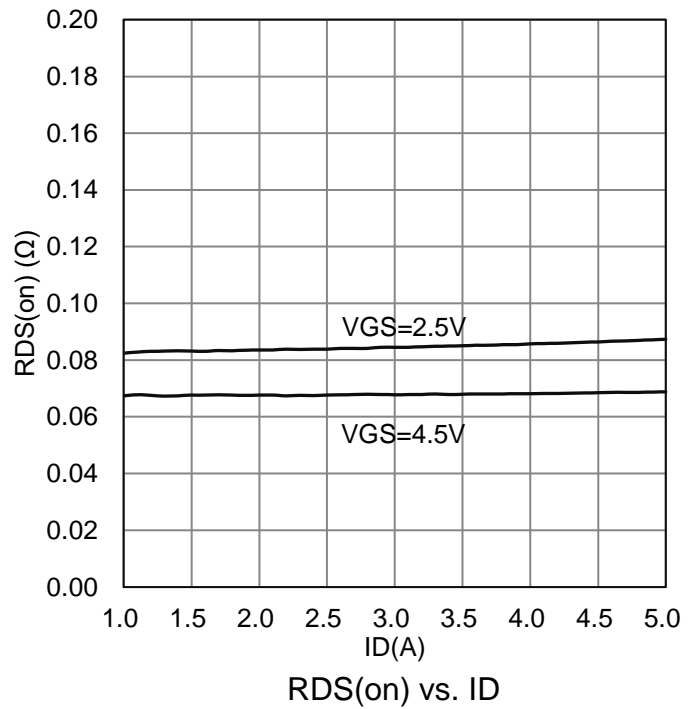
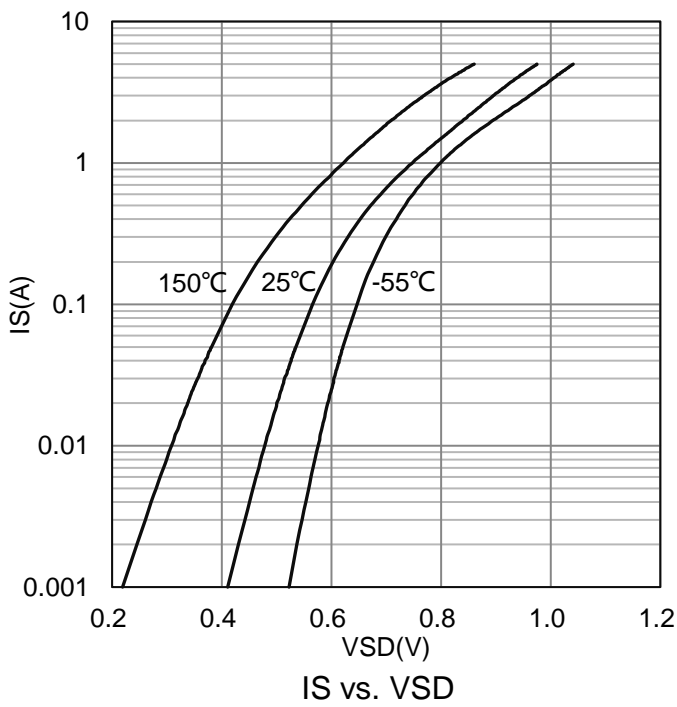
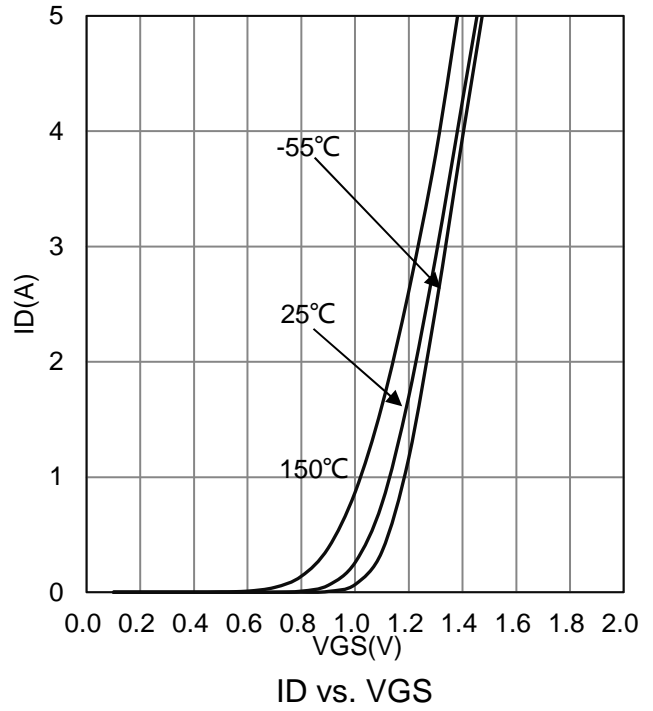
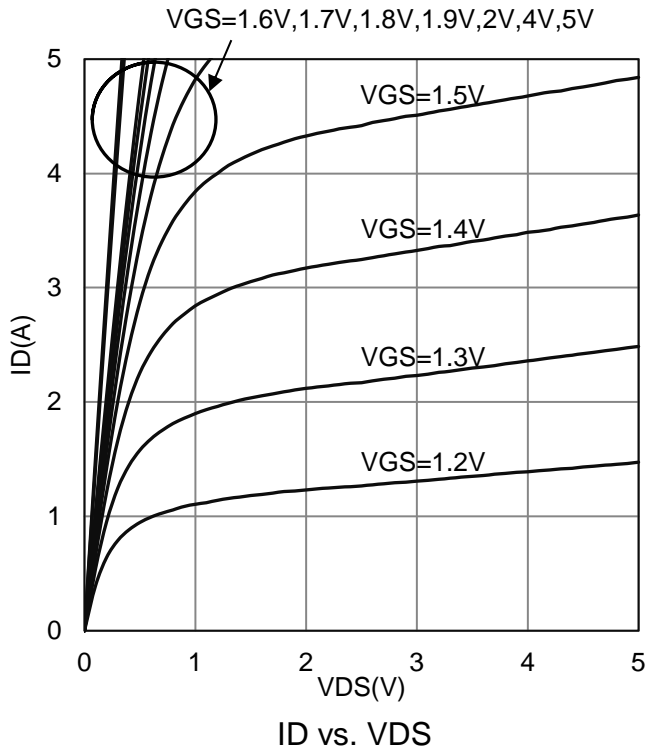


## 6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

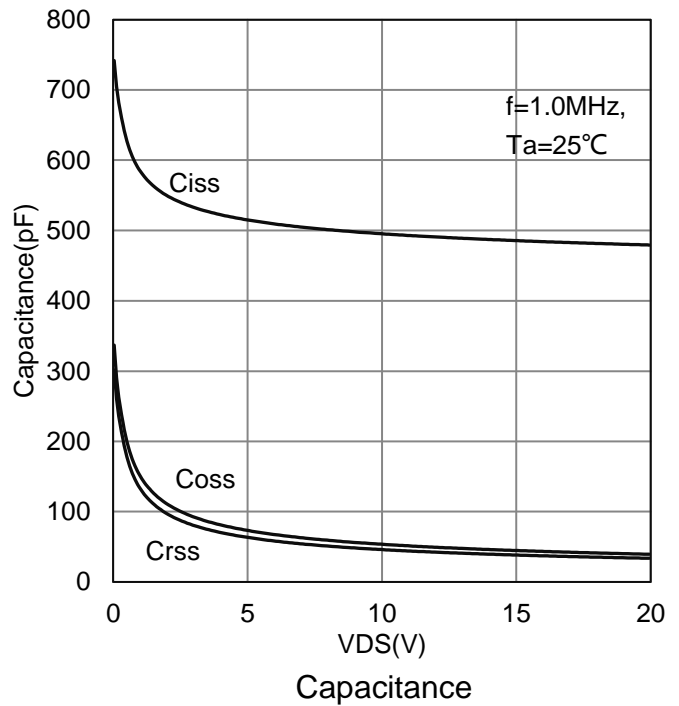
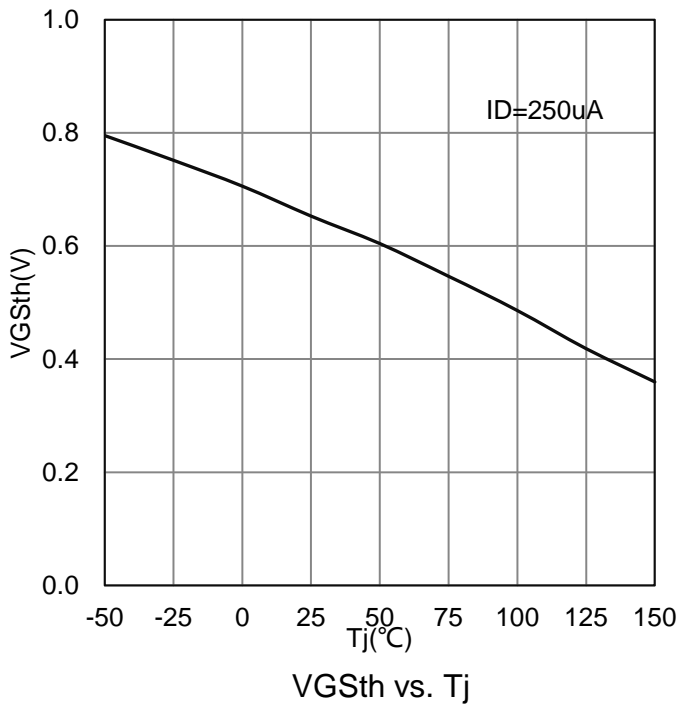
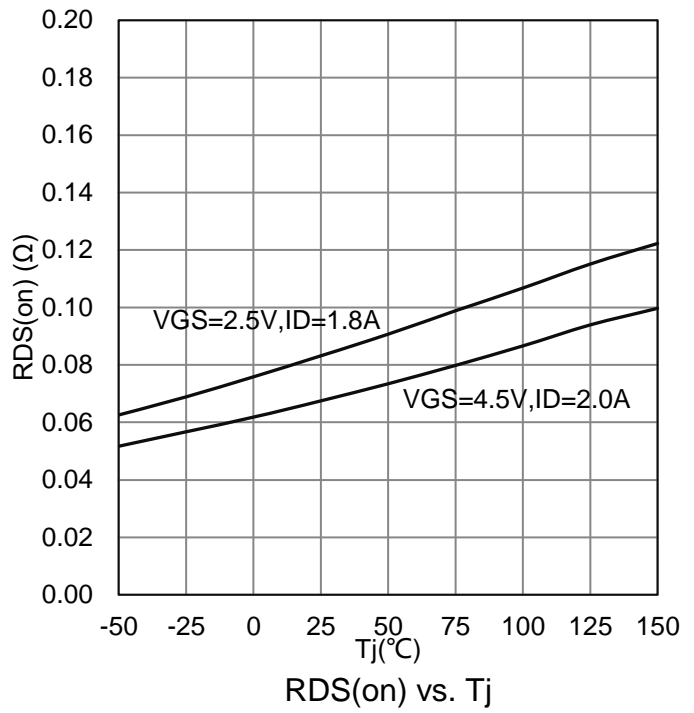
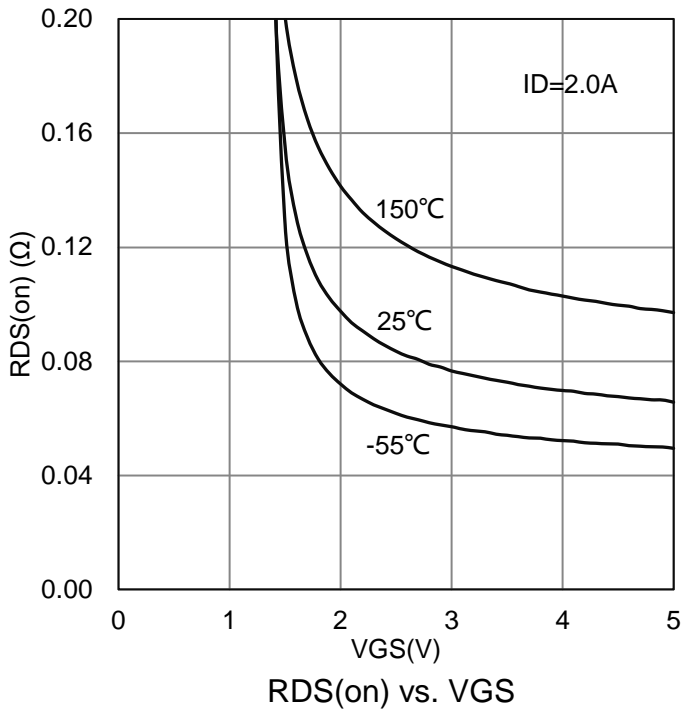
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
<b>Static</b>						
Drain–Source Breakdown Voltage (VGS = 0 V, ID = -250 μA)	VBRDSS	-20	-	-	V	
Gate-Source Threshold Voltage (VDS = VGS , ID = -250 μA)	VGS(th)	-0.4	-	-0.9	V	
Gate-Body Leakage Current (VDS = 0 V, VGS = ± 12 V)	IGSS	-	-	± 100	nA	
Zero Gate Voltage Drain Current (VDS = -16 V, VGS = 0 V)	IDSS	-	-	-1	uA	
Drain-Source On-Resistance(Note 3) (VGS = -4.5 V, ID = -2 A) (VGS = -2.5 V, ID = -1.8 A)	RDS(ON)	-	-	100 130	mΩ	
Diode Forward Voltage (IS = -1 A, VGS = 0 V)	VSD	-0.4	-0.8	-1.2	V	
<b>Dynamic</b>						
Total Gate Charge	(VDS = -10 V, VGS = -4.5 V, ID = -2 A)	Qg	-	5.4	-	nC
Gate to Source Charge		Qgs	-	0.6	-	
Gate to Drain Charge		Qgd	-	1.6	-	
Turn-on Delay Time	(VDS = -10 V, ID = -1 A, RL = 10 Ω, VGS = -4.5 V, RG = 6.2 Ω)	td(on)	-	4.5	-	nS
Rise Time		tr	-	6.2	-	
Turn-Off Delay Time		td(off)	-	95	-	
Fall Time		tf	-	47	-	
Input Capacitance	(VDS = -10 V, VGS = 0 V, f = 1MHz)	Ciss	-	497	-	pF
Output Capacitance		Coss	-	55	-	
Reverse Transfer Capacitance		Crss	-	47	-	

3. Pulse test: PW ≤ 300us duty cycle ≤ 2%.

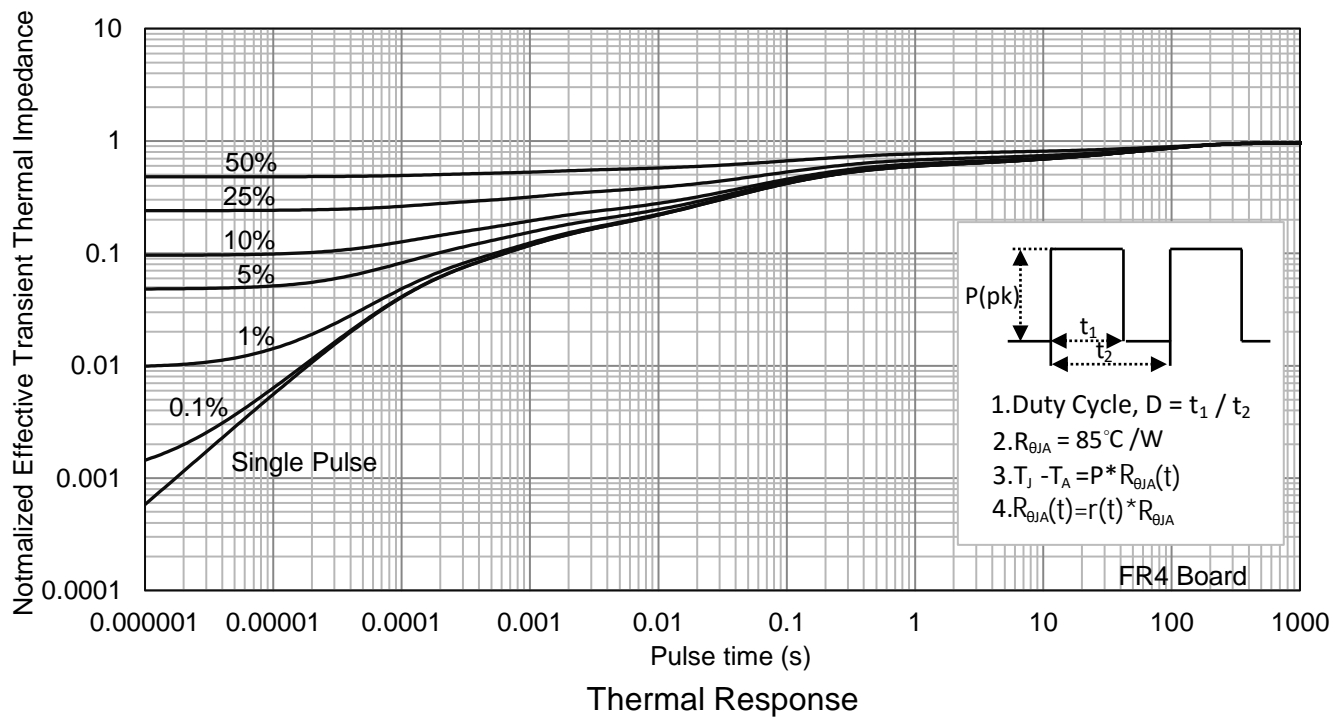
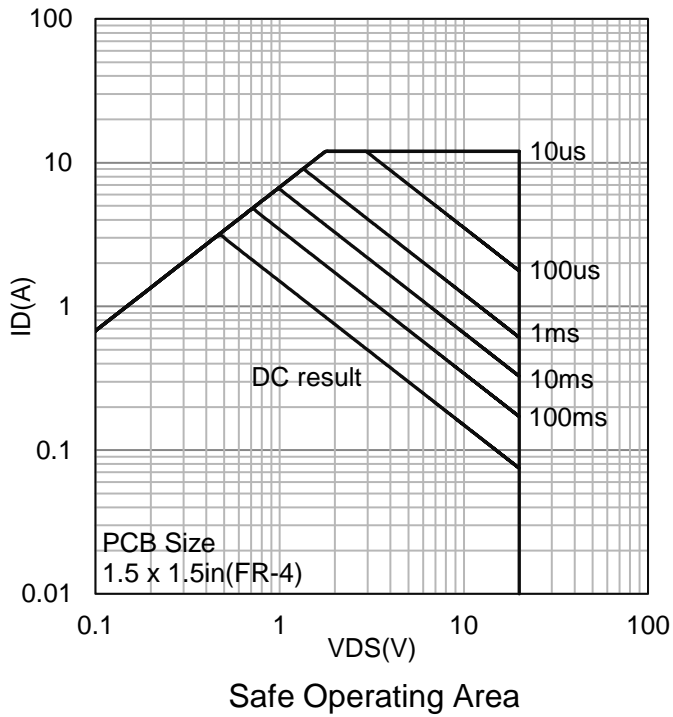
### 7. ELECTRICAL CHARACTERISTICS CURVES



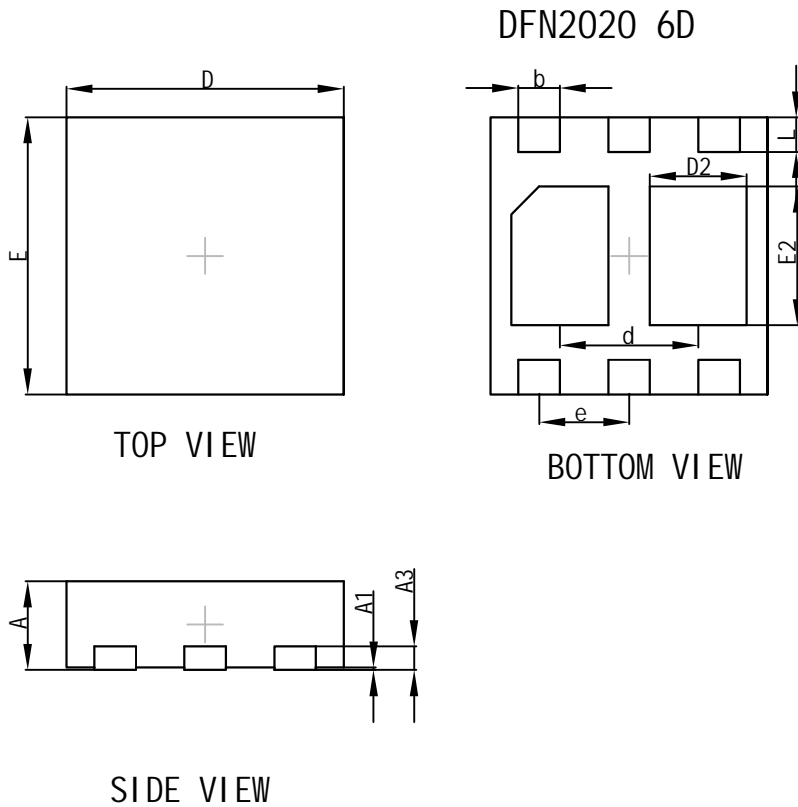
**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



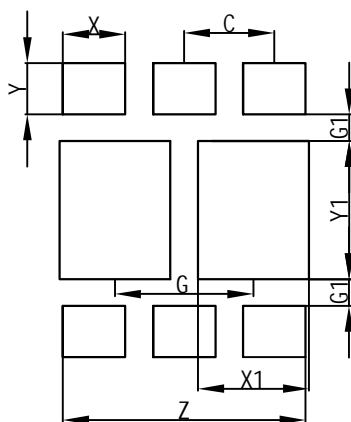
### 8. OUTLINE AND DIMENSIONS (Unit:mm)



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	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			

### 9. SOLDERING FOOTPRINT

**DFN2020 6D**



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

## **DISCLAIMER**

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
- Before you use our Products for new Project, you are requested to carefully read this document and fully understand its contents. LRC shall not be in any way responsible or liable for failure, malfunction or accident arising from the use of any LRC's Products against warning, caution or note contained in this document.
- All information contained in this document is current as of the issuing date and subject to change without any prior notice. Before purchasing or using LRC's Products, please confirm the latest information with a LRC sales representative.

单击下面可查看定价，库存，交付和生命周期等信息

[>>LRC\(乐山无线电\)](#)