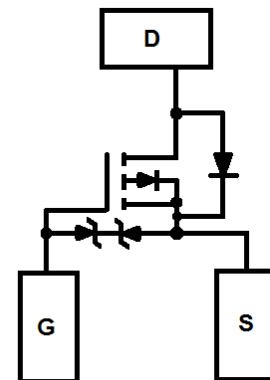
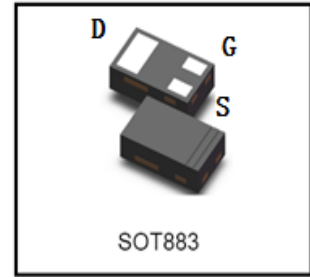


# LP0404N3T5G

20V, P-Channel (D-S) MOSFET

## 1. FEATURES

- $V_{DS} = -20V$   
 $R_{DS(ON)} \leq 0.48\Omega, V_{GS@-4.5V}, I_{DS@-780mA}$   
 $R_{DS(ON)} \leq 0.67\Omega, V_{GS@-2.5V}, I_{DS@-660mA}$   
 $R_{DS(ON)} \leq 0.95\Omega, V_{GS@-1.8V}, I_{DS@-100mA}$   
 $R_{DS(ON)} \leq 2.2\Omega, V_{GS@-1.5V}, I_{DS@-100mA}$
- Super high density cell design for extremely low  $R_{DS(ON)}$ .
- Exceptional on-resistance and maximum DC current capability.
- Gate to Source ESD protection
- MSL:1
- Total shelf life : >10 years
- We declare that the material of product compliance with RoHS requirements and Halogen Free.



## 2. APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System

## 3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LP0404N3T5G	T5	10000/Tape&Reel

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

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	$V_{DSS}$	-20	V
Gate-to-Source Voltage	$V_{GS}$	$\pm 6$	V
Drain Current (Note 1) Steady State	$I_D$	-1.4	A
Pulsed Drain Current	$I_{DM}$	-5	A
Power Dissipation	PD	950	mW
Operating and Storage temperature	$T_{op}, T_{stg}$	-55~+150	C

## 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient(Note 1)	$R_{\theta JA}$	131	$^\circ C/W$

Note 1. Surface mounted on 1.5 x 1.5 FR4 board using 1 sq in pad, 2 oz Cu.

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

Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>Static</b>					
Drain-Source Breakdown Voltage (VGS = 0V, ID = -250uA)	V(BR)DSS	-20	-	-	V
Gate Threshold Voltage (VDS =VGS , ID =-250μA)	VGS(th)	-0.4	-0.92	-1.2	V
Gate Leakage Current (VDS =0V, VGS =±4.5V)	IGSS	-	-	±10	μA
Zero Gate Voltage Drain Current (VDS =-16V, VGS =0V)	IDSS	-	-	-1	μA
Drain-Source On-Resistance(Note 2) (VGS=-4.5V,ID=-780mA)	RDS(ON)	-	0.34	0.48	Ω
Drain-Source On-Resistance(Note 2) (VGS=-2.5V,ID=-660mA)		-	0.45	0.67	
Drain-Source On-Resistance(Note 2) (VGS=-1.8V,ID=-100mA)		-	0.72	0.95	
Drain-Source On-Resistance(Note 2) (VGS=-1.5V,ID=-100mA)		-	1.3	2.2	
Diode Forward Voltage (IS =-350mA, VGS =0V)	VSD	-	-0.83	-1.2	V
<b>Dynamic</b>					
Total Gate Charge	(VDS =-16V, VGS =-4.5V, ID =-200mA)	Qg	-	1.14	nC
Gate-Source Charge		Qgs	-	0.3	
Gate-Drain Charge		Qgd	-	0.3	
Turn-On Delay Time	(VDD =-10V, RL =50Ω,VGEN =- 5V,RG =10Ω,ID =-200mA)	td(on)	-	51.3	ns
Rise Time		tr	-	24.2	
Turn-Off Delay Time		td(off)	-	246	
Fall Time		tf	-	81.2	
Input Capacitance	(VDS = -16 V, VGS = 0 V, f = 1 MHz)	Ciss	-	78.2	pF
Output Capacitance		Coss	-	9.68	
Reverse Transfer Capacitance		Crss	-	5.18	

Note 2: Pulse test; pulse width ≤ 300μs, duty cycle ≤ 2%.

**7. ELECTRICAL CHARACTERISTICS CURVES**

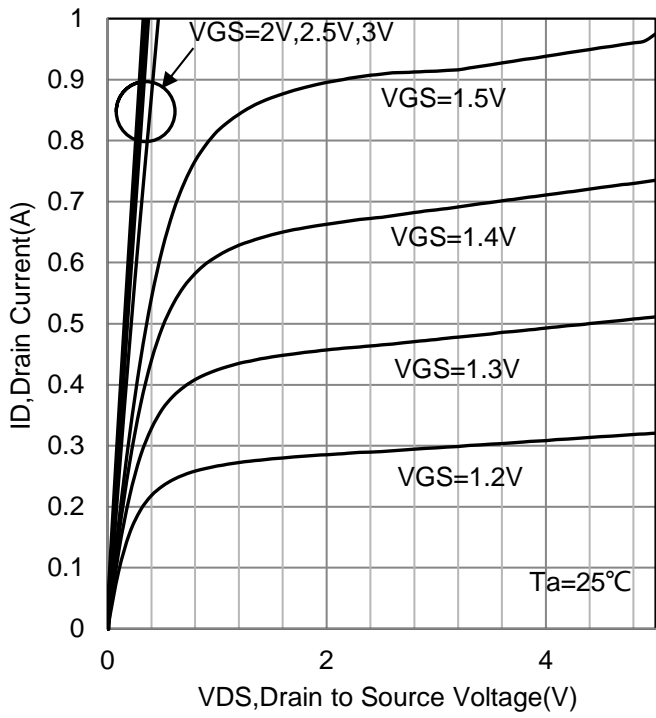


Figure 1.ID vs. VDS

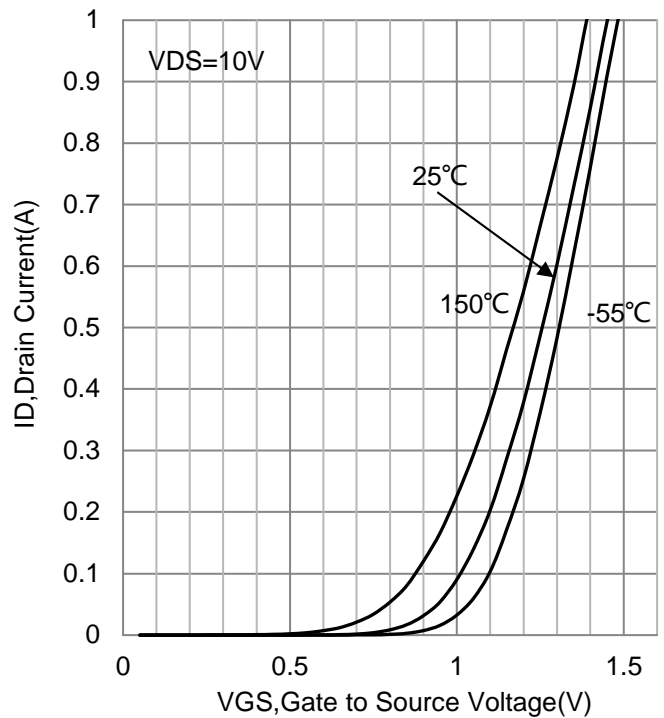


Figure 2.ID vs. VGS

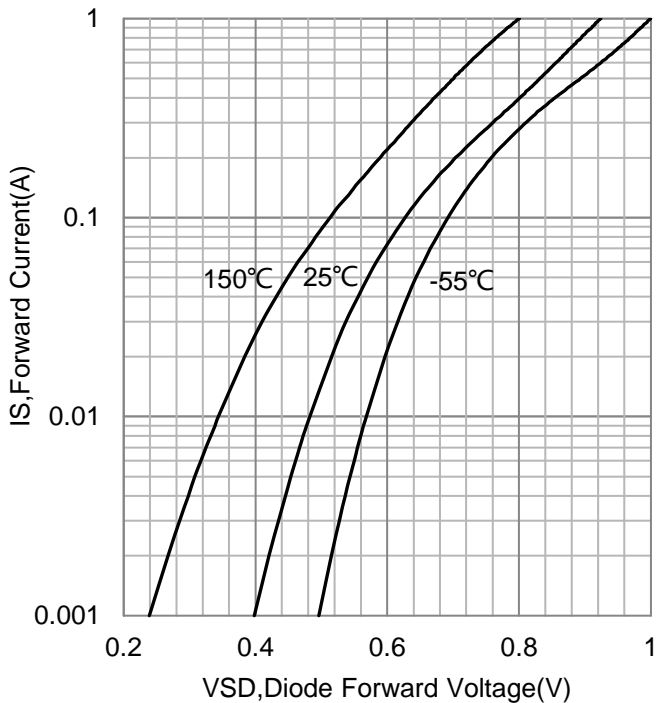


Figure 3.IS vs. VSD

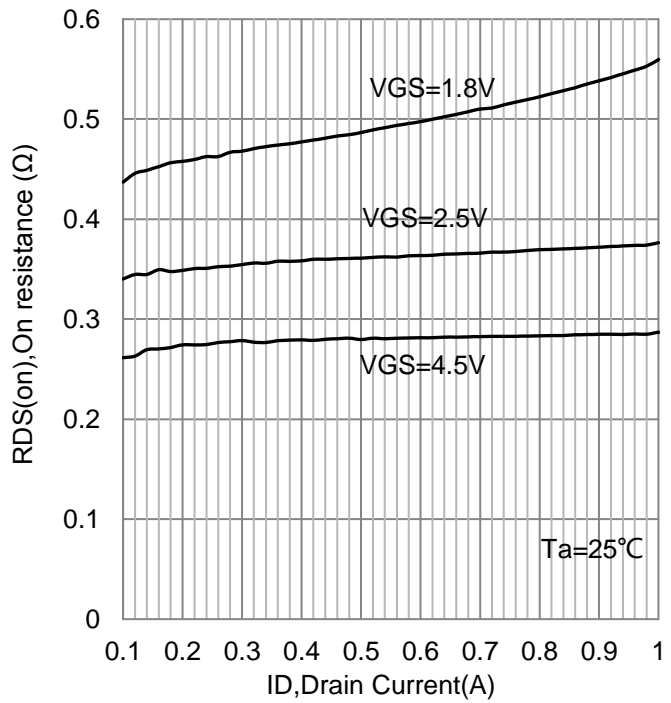
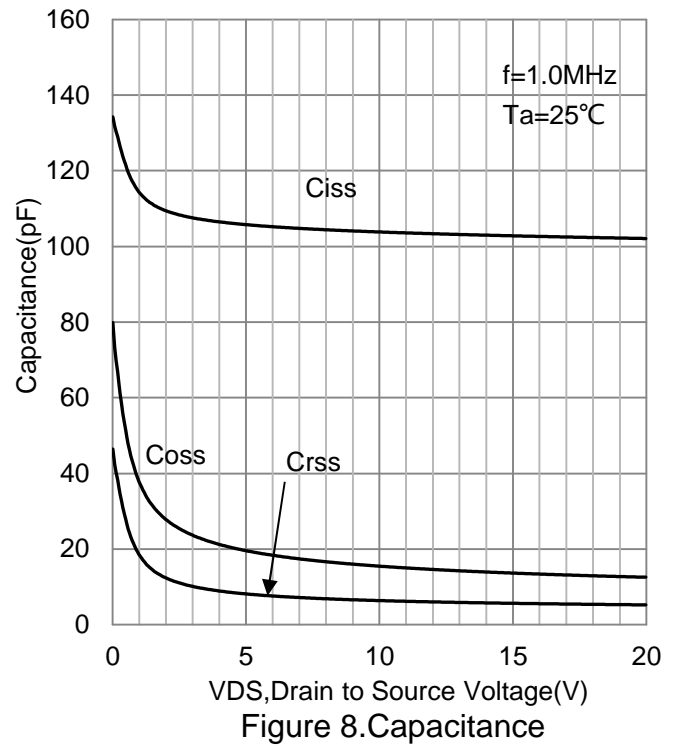
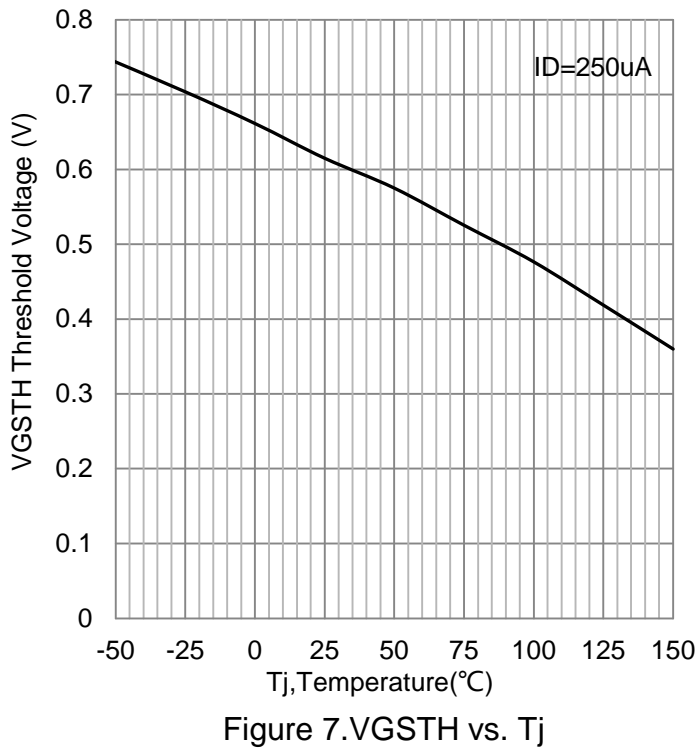
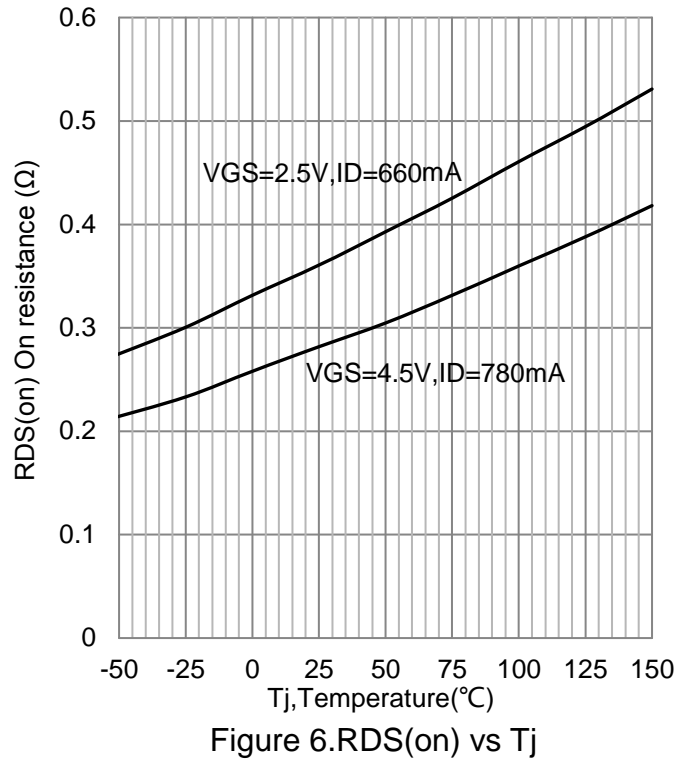
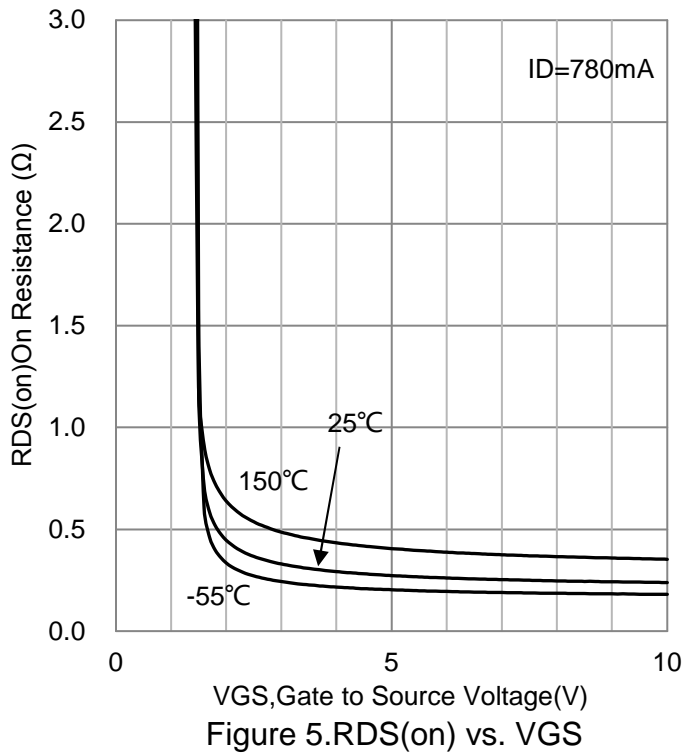


Figure 4.RDS(on) vs. ID

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



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

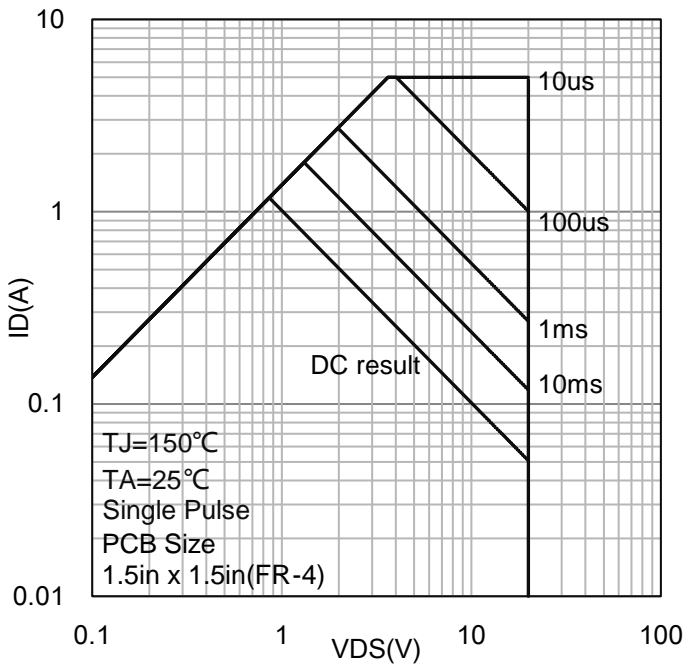


Figure 9.Safe Operating Area

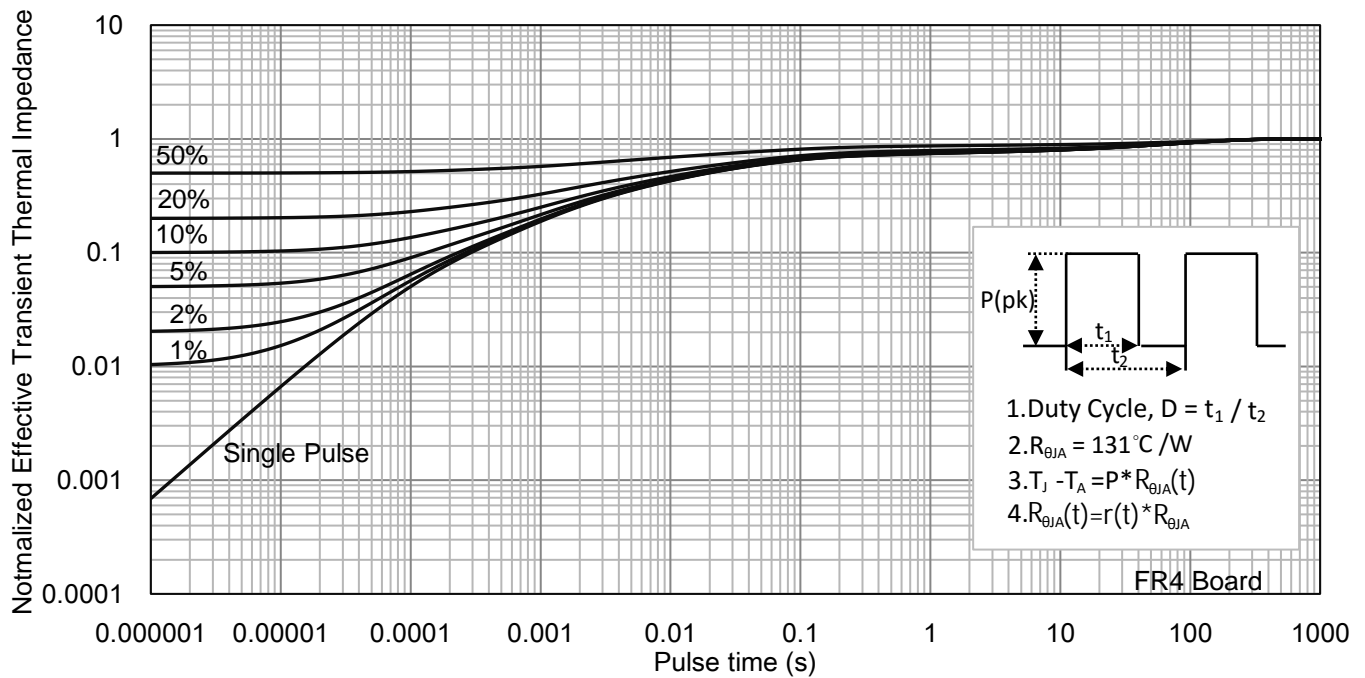
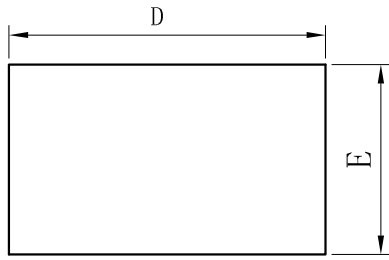
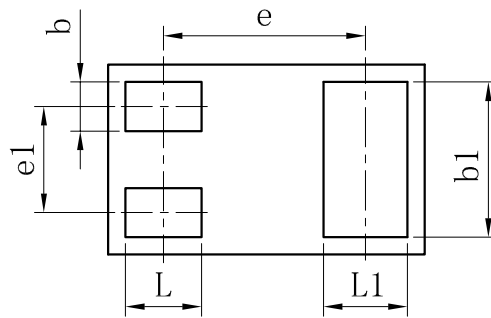


Figure 10.Thermal Response

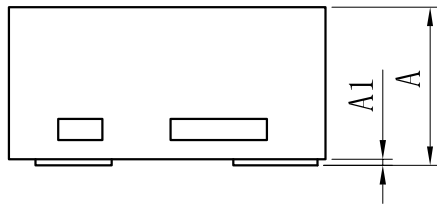
### 8.OUTLINE AND DIMENSIONS



TOP VIEW



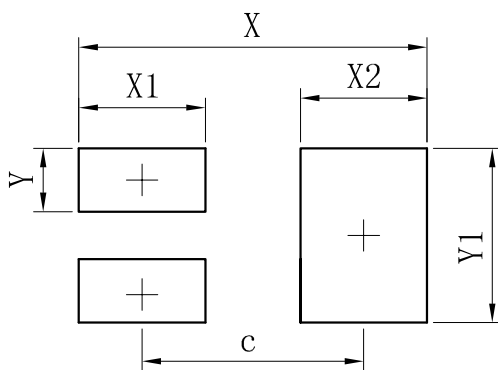
BOTTOM VIEW



SIDE VIEW

SOT883			
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
All Dimensions in mm			

### 8.SOLDERING FOOTPRINT



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

## **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.
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- 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.