

# LP137N3T5G

## 20V P-Channel Enhancement MOSFET

### 1. FEATURES

- VDS = -20V
- Super high density cell design for extremely low RDS(ON).
- Fast Switching.
- Gate to Source ESD Protected.
- 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
LP137N3T5G	PF	10000/Tape&Reel

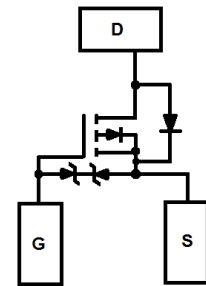
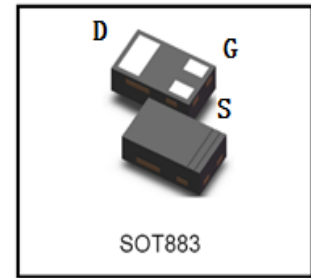
### 4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	VDSS	-20	V
Gate-to-Source Voltage	VGS	±8	V
Drain Current			A
– Continuous TA = 25°C	ID	-0.9	
– Pulsed (Note 2)	IDM	-3.6	
Maximum Power Dissipation	PD	0.4	W
Operating Junction and Storage Temperature Range	TJ/Tstg	-55~+150	°C

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Junction-to-Ambient – Steady State (Note 1)	RθJA	305	°C/W

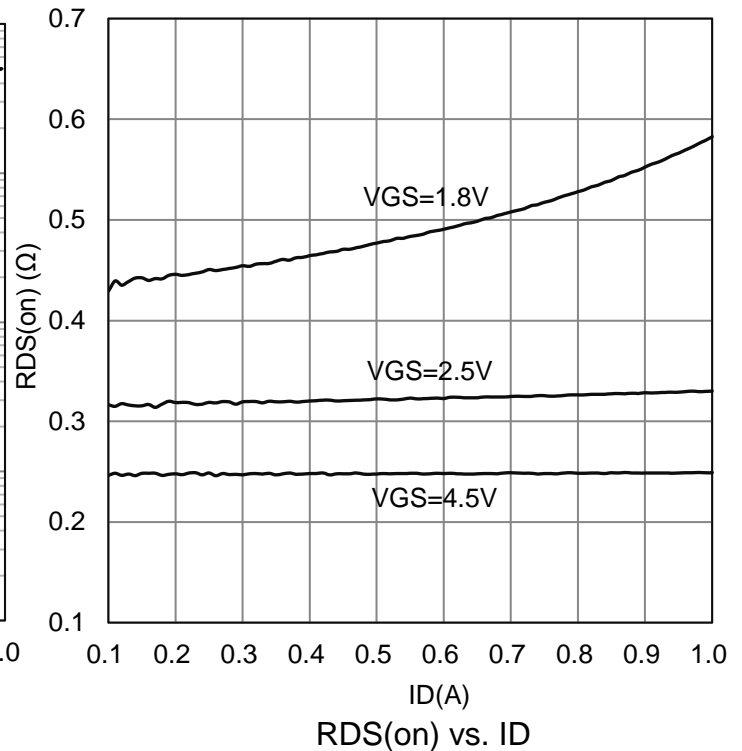
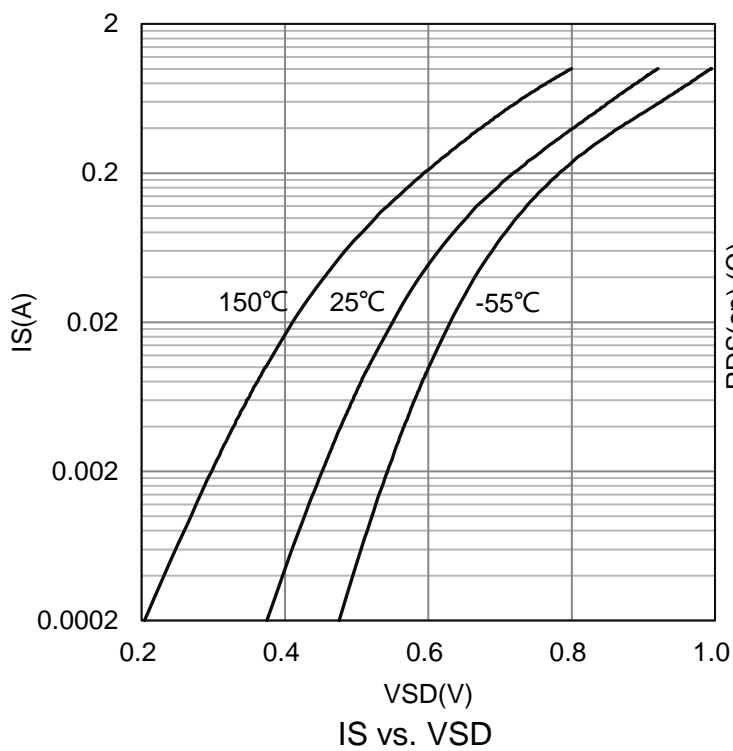
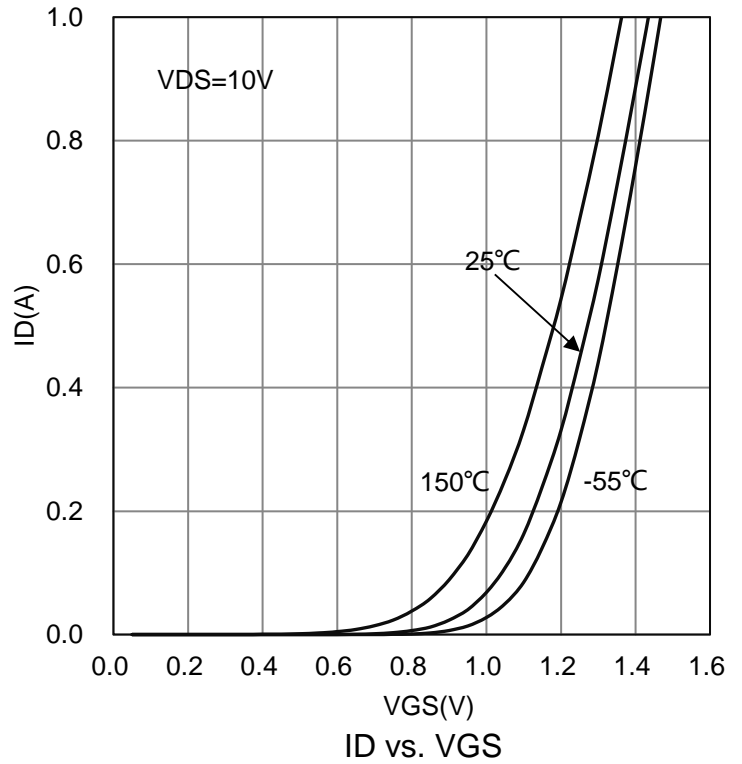
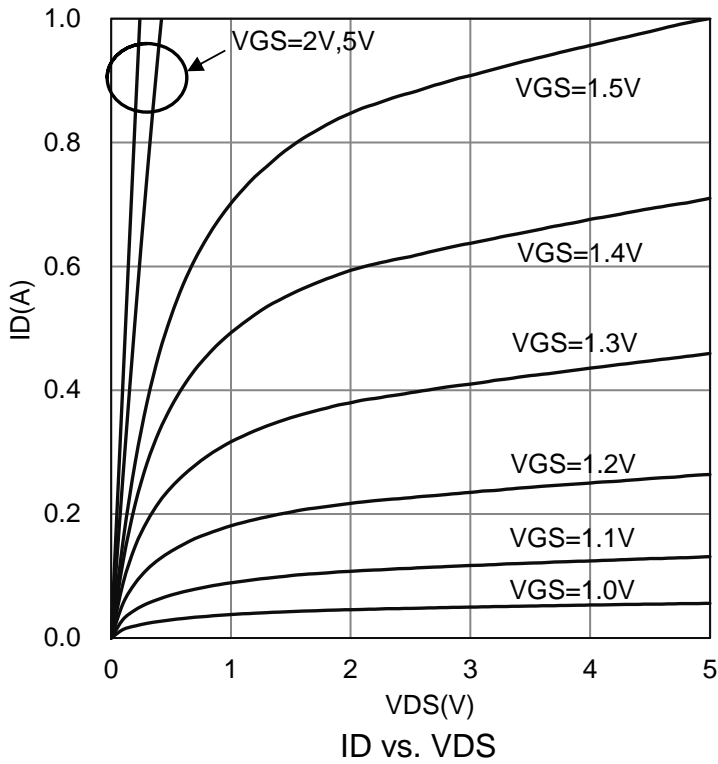
1. Surface-mounted on FR4 board using 1 in sq pad size (Cu area = 1.127 in sq [1 oz] including traces)
- 2.Repetitive Rating: Pulse width limited by the maximum junction temperature.



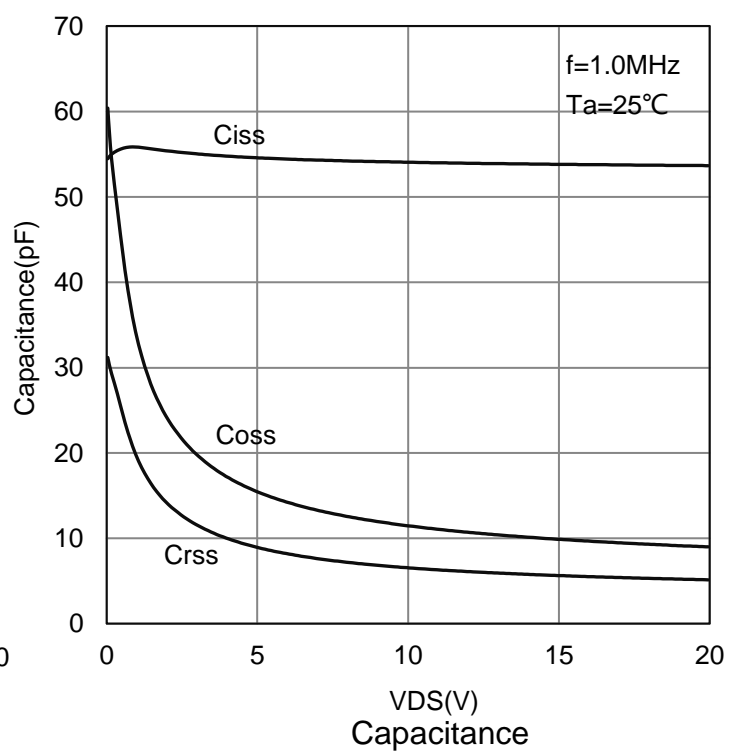
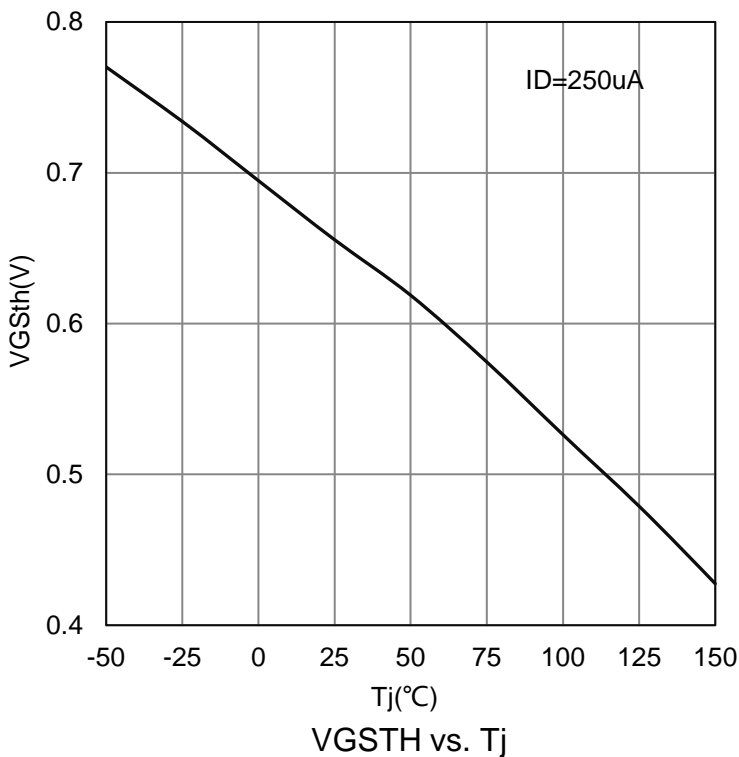
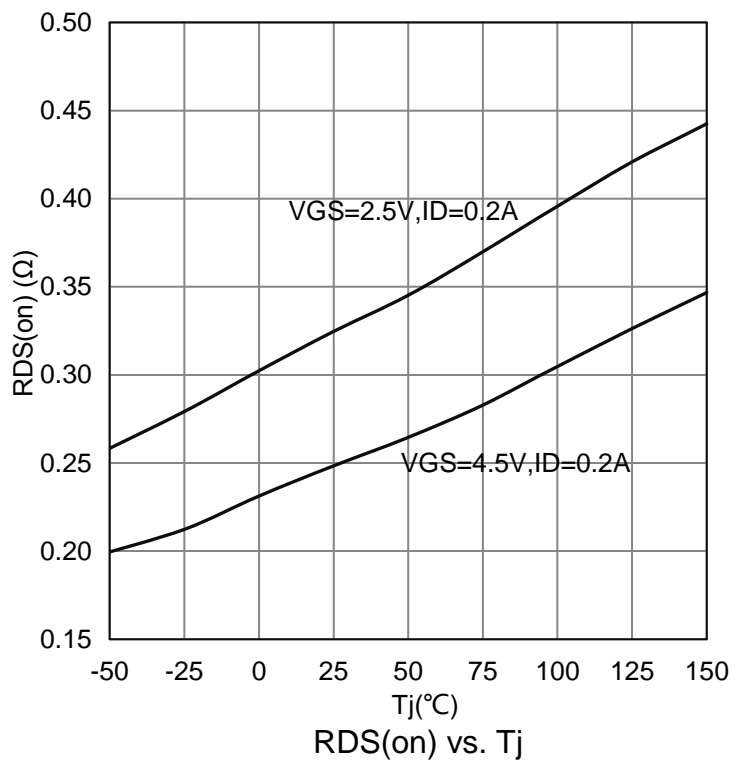
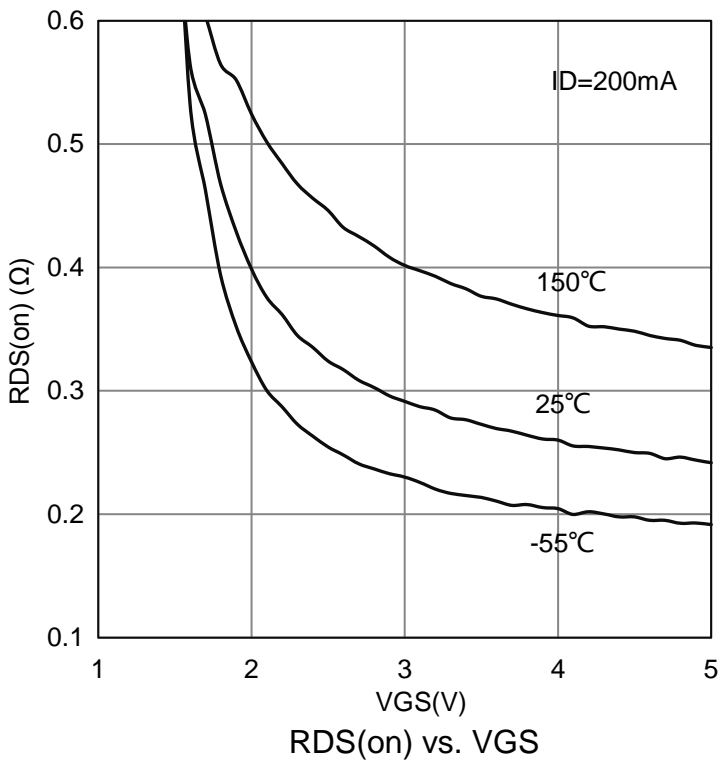
### 6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

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	-0.68	-1	V	
Gate Body Leakage Current (VDS =0V, VGS =±8V)	IGSS	-	-	±10	μA	
Zero Gate Voltage Drain Current (VDS =-20V, VGS =0V)	IDSS	-	-	-1	μA	
Drain-Source On-State Resistance (VGS=-4.5V, ID=-0.2A) (VGS=-2.5V, ID=-0.2A) (VGS=-1.8V, ID=-0.2A)	RDS(ON)	-	-	310 420 890	mΩ	
Diode Forward Voltage (IS = -1.0A, VGS = 0V)	VSD	-	-	-1.5	V	
<b>Dynamic</b>						
Total Gate Charge	(VDS =-16V, VGS =-4.5V, ID =-200mA)	Qg	-	1.4	-	nC
Gate-Source Charge		Qgs	-	0.15	-	
Gate-Drain Charge		Qgd	-	0.5	-	
Turn-On Delay Time	(VDD =-10V, RL =50Ω,VGEN =- 5V,RG =10Ω,ID =-200mA)	td(on)	-	26	-	ns
Rise Time		tr	-	66	-	
Turn-Off Delay Time		td(off)	-	82	-	
Fall Time		tf	-	280	-	
Input Capacitance	(VDS = -16 V, VGS = 0 V, f = 1 MHz)	Ciss	-	54	-	pF
Output Capacitance		Coss	-	9.7	-	
Reverse Transfer Capacitance		Crss	-	5.5	-	
Gate-Resistance (VDS = 0 V, VGS = 0 V, f = 1MHz)	Rg	-	1402	-	Ω	
Reverse Recovery Time (IS=-0.8A,dIf/dt=15A/us)	trr	-	75	-	ns	
Reverse Recovery Charge (IS=-0.8A,dIf/dt=15A/us)	Qrr	-	9.5	-	nC	

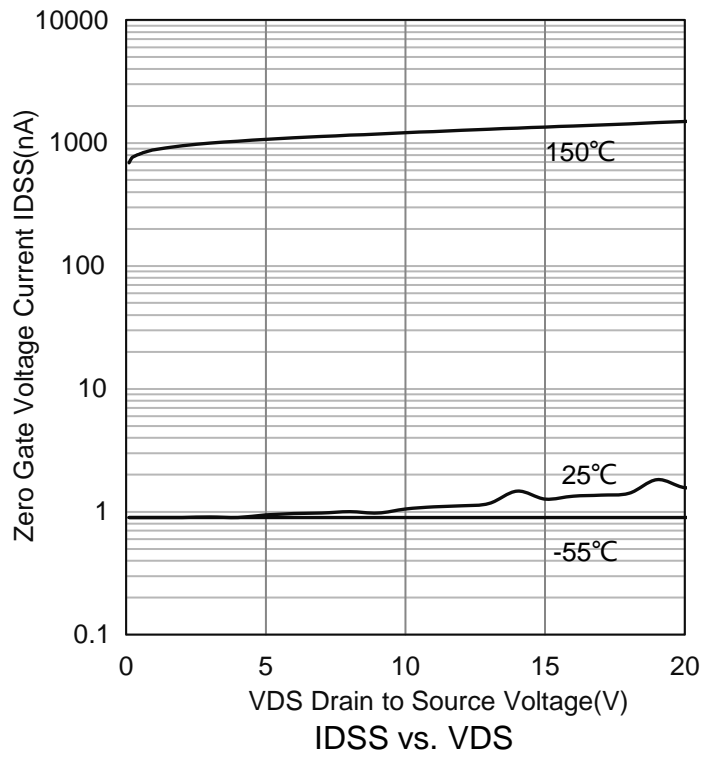
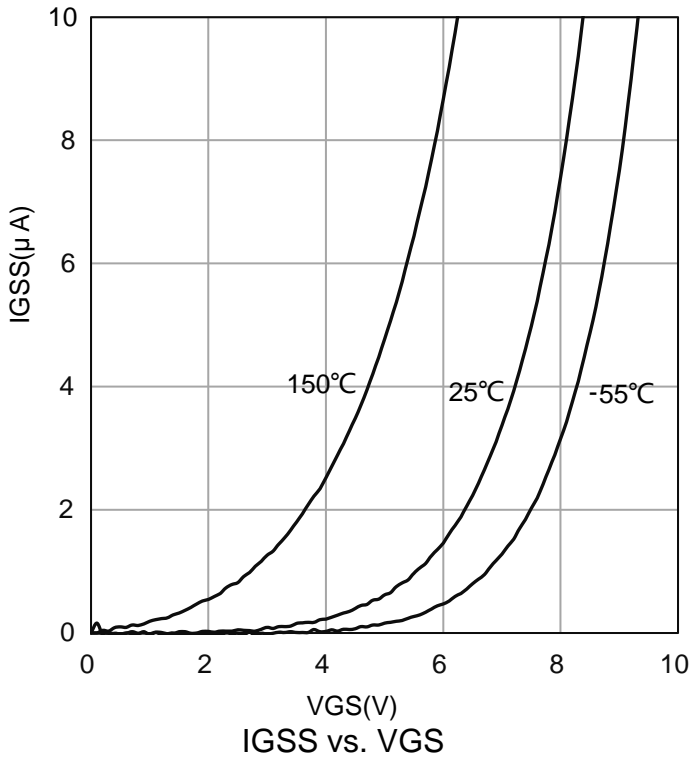
**7 ELECTRICAL CHARACTERISTICS CURVES**



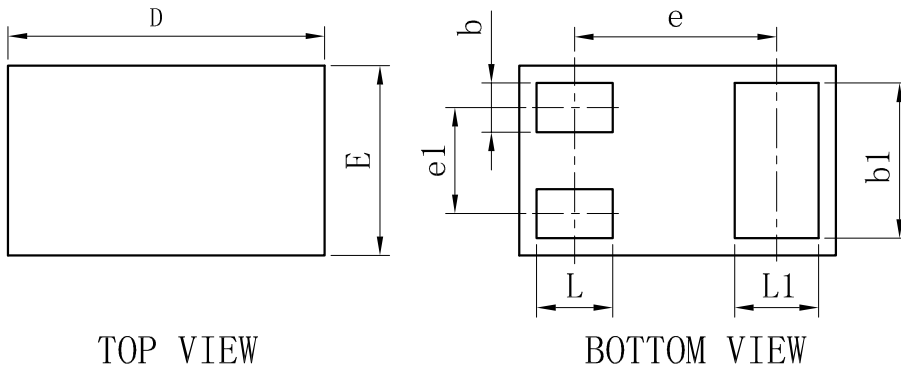
**7 .ELECTRICAL CHARACTERISTICS CURVES(Con.)**



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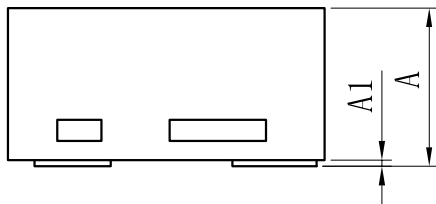


### 8. OUTLINE AND DIMENSIONS



TOP VIEW

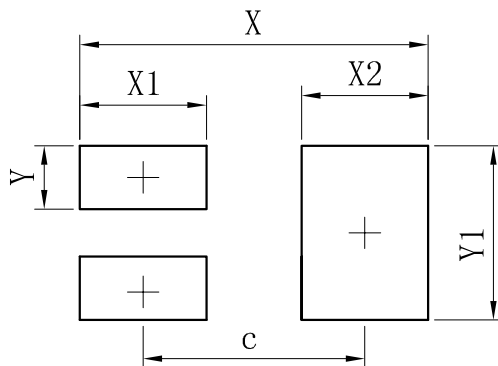
BOTTOM VIEW



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			

### 9. SOLDERING FOOTPRINT



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