OTi-6858 Data Sheet

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OTi

OTi–6858 Data Sheet

USB To RS232 Bridge Controller

APPROVED SHEET

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Our Technologies are Yours!

■ OVERVIEW

The OTi 6858 is a powerful RS232 port to USB port bridge controller. The two on-chip large buffers can support high speed RS232 Baud Rate up to 3Mbps, and support software programmable Baud Rate. The RS232 flow control can be handled either by software or hardware, which makes it more flexible for applications. On chip Regulator and ROM reduce the cost of system product.. The shutdown mode of the RS232 transceiver is controlled by software, such that various type of transceivers can be used.

The USB port is fully compliant with USB 1.1 full speed Specifications and supports suspend and resume functions for power management. The Bulk Only transfer type and smart buffer control scheme are adopted for maximum data transfer.

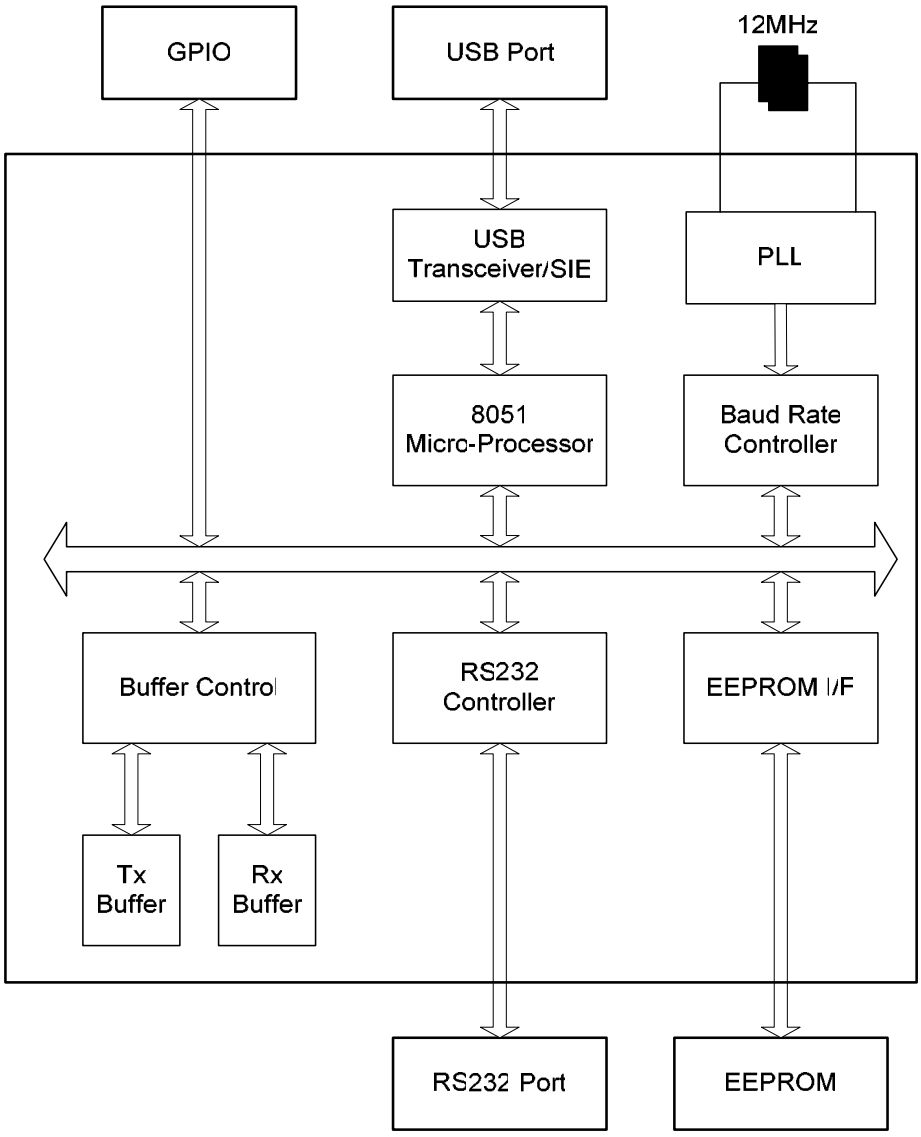
The OTi-6858 is available in package: 28-pin SSOP for low cost .

■ FEATURES

- ♦ USB Specification Compliant (as device)
  - — Conform to full-speed (12Mb/s) USB Specification, Version 1.1
- ♦ Support Suspend and Resume power management
- ♦ RS232 Serial interface
  - — Date format: 5,6,7,8 and 16
  - — Parity Type: Even, Odd, Mark, Space and None
  - — Stop Bit: 1, 1.5 and 2 bit time
- ♦ Support Software/Hardware RS232 flow control
- ♦ Large buffer on each Transmitting and Receiving port for high speed RS232 transfer
- ♦ Automatic RS232 transceiver shutdown control
- ♦ Software programmable baud rate up to 3M baud
- ♦ Smart buffer control scheme
- ♦ On-chip ROM and External EEPROM for device configuration

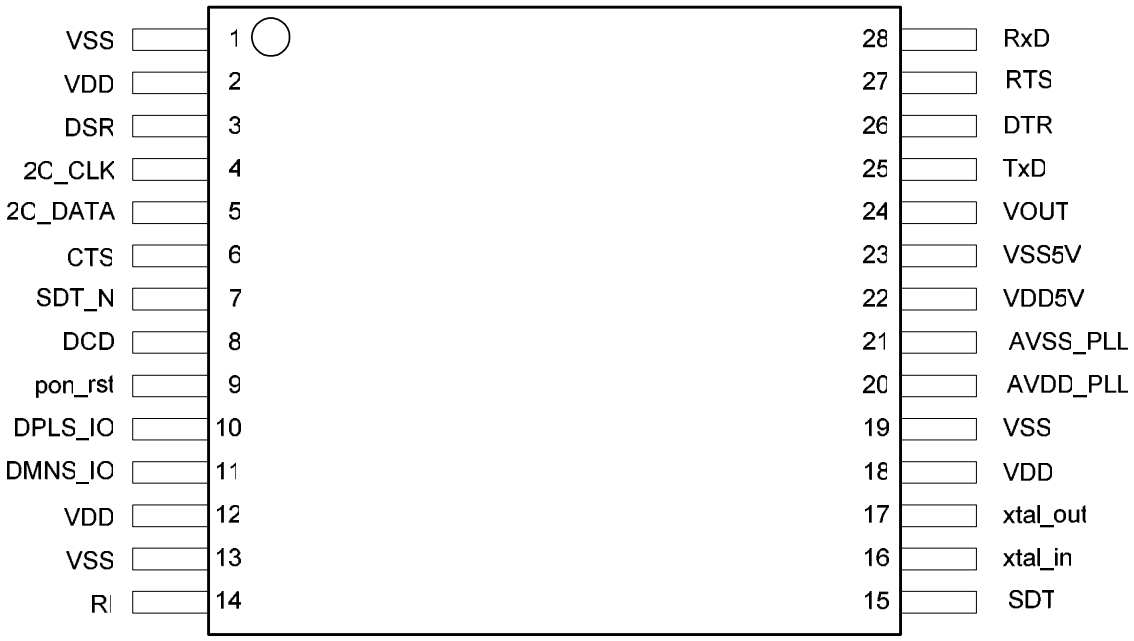
- On-chip USB transceiver and 5V to 3.3V Regulator
- LED indicator: Transmitting/Receiving busy or software programmable.
- Supports Windows 98/SE, ME, 2000, XP
- 28 Pins SSOP package

■ BLOCK DIAGARAM



■ PIN CONFIGUARTION

SSOP-28



■ PIN DESCRIPTION

OTi-6858 is available in package: 28-pin SSOP .

Pin No.	Name	Type	Description	Pin Status at Power On	Pin Status at Suspend
1	VSS	G	Ground	NA	NA
2	VDD	P	Power	NA	NA
3	DSR	I	Data Set Ready	High Impedance with pull high	High Impedance with pull high
4	I2C_CLK	O	EEPROM Clock	Output mode	Output mode
5	I2C_DATA	I/O	EEPROM Data	High Impedance	High Impedance
6	CTS	I	Clear To Send	High Impedance with pull high	High Impedance with pull high
7	SDT_N	O	Shut Down RS232 Transceiver low active	Output mode	Output mode
8	DCD	I	Data Carrier Detect	High Impedance with pull high	High Impedance with pull high
9	PON_RST	I	Low active Power On Reset	High Impedance	High Impedance
10	DPLS_IO	I/O	USB D+	High Impedance	High Impedance
11	DMNS_IO	I/O	USB D-	High Impedance	High Impedance
12	VDD	P	Power	NA	NA
13	VSS	G	Ground	NA	NA
14	RI	I	Ring Indicator	High Impedance with pull high	High Impedance with pull high
15	SDT	O	Shut Down RS232 Transceiver high active/LED	Output mode	Output mode
16	Xtal_In	I	Crystal pad Input	High Impedance	High Impedance
17	Xtal_Out	O	Crystal Pad Output	Output mode	Output mode
18	VDD	P	Power	NA	NA
19	VSS	G	Ground	NA	NA
20	AVDD_PLL	P	PLL Power	NA	NA
21	AVSS_PLL	G	PLL Ground	NA	NA
22	VDD5V	P	Regulator 5V power In	NA	NA
23	VSS5V	G	Regulator GND	NA	NA
24	VOUT	P	Regulator 3V power Out	NA	NA
25	TxD	O	Data transmitted	Output mode	Output mode

26	DTR	O	Data Terminal Ready	Output mode	Output mode
27	RTS	O	Request To Send	Output mode	Output mode
28	RxD	I	Data received	High Impedance with pull high	High Impedance with pull high

■ Programmable Baud Rate Generator

A 96Mhz clock is input to the Baud Rate synthesis module. The required Baud Rate can be obtained by setting the divider register according to the input clock rate.

For example, if the target baud rate is 38400

96000000/(38400*16) = 156

the baud rate divider register will be set to (009C)h, and bits 23 to 20 are set to “don’t care”.

■ EEPROM DESCRIPTION

EEPROM Content

Offset Byte#	Name	Description
0:1	CID	Check ID
2:3	PID	Product ID
4:5	VID	Vendor ID
6	EDCR	Enable Device Configuration Register
7	DCR	Device Configuration Register
8	EMP	Enable USB Max Power Description
9	MP	USB Max Power Description
10	EIV	Enable IC Version Set
11:12	OF	IC Obsolete field
13:14	PC	IC Project code
15:16	RN	IC Revision Number
17	EDCR0	Enable Device Configuration Register 0
18	DCR0	Device Configuration Register 0
19:50	SN	Serial Number

■ DEVICE CONFIGURATION REGISTER DESCRIPTION

Device Configuration Register (DCR)

Offset Bit#	Name	Definition	Default
0	VOL	Voltage Output Level: 1 – RS232 Output Normal Voltage 0 – RS232 Output Special Voltage	1
1	SDMS	Shutdown Mode Select: 1 – Shutdown Output 0 – Led Output	1
2	LMS	Led Mode Select: 1 – Hardware Control Output 0 – Software Control Output	1
3	POFS	PLL Output Frequency Select: 1 – 96MHz 0 – 48MHz	1
4	SDS	Shutdown Select: 1 – Normal 0 – Shutdown Output	1
5	LO	Led Output: 1 – Output High 0 – Output Low	1

Device Configuration Register0 (DCR0)

Offset Bit#	Name	Definition	Default
0	ESN	Enable USB Serial Number : 1 – Off 0 – On	1

■ Electric characteristics

Absolute Maximum Ratings

Item	Rating
Regulator Input Voltage	5V±0.5V
Digital Power Voltage	3.3V±0.3V
Analog Power Voltage	3.3V±0.3V

DC Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Regulator Output voltage	V_{RO}	2.97	3.3	3.63	V
Regulator supply current	I_{RO}	-	-	200	mA
Regulator Standby current	I_{RSB}	-	58	-	µA
Input Voltage					V
High	V_{ih}	2.31	-	-	
Low	V_{il}	-	-	0.99	
Schmitt Trigger Threshold voltage					V
Low to High	V_{t+}	-	2.0	-	
High to Low	V_{t-}	-	1.3	-	
Output Voltage					V
High	V_{oh}	2.4	-	3.3	
Low	V_{ol}	-	0.2	0.4	
Input Capacitance	C_{il}	-	2.862	-	pF
Output Capacitance	C_{ol}	-	6.235	-	pF
Bi-direction Capacitance	C_{bl}	-	6.235	-	pF
RS232 Output pin current	I_{RSO}		8		mA
Normal Output pin current	I_{NO}		4		mA

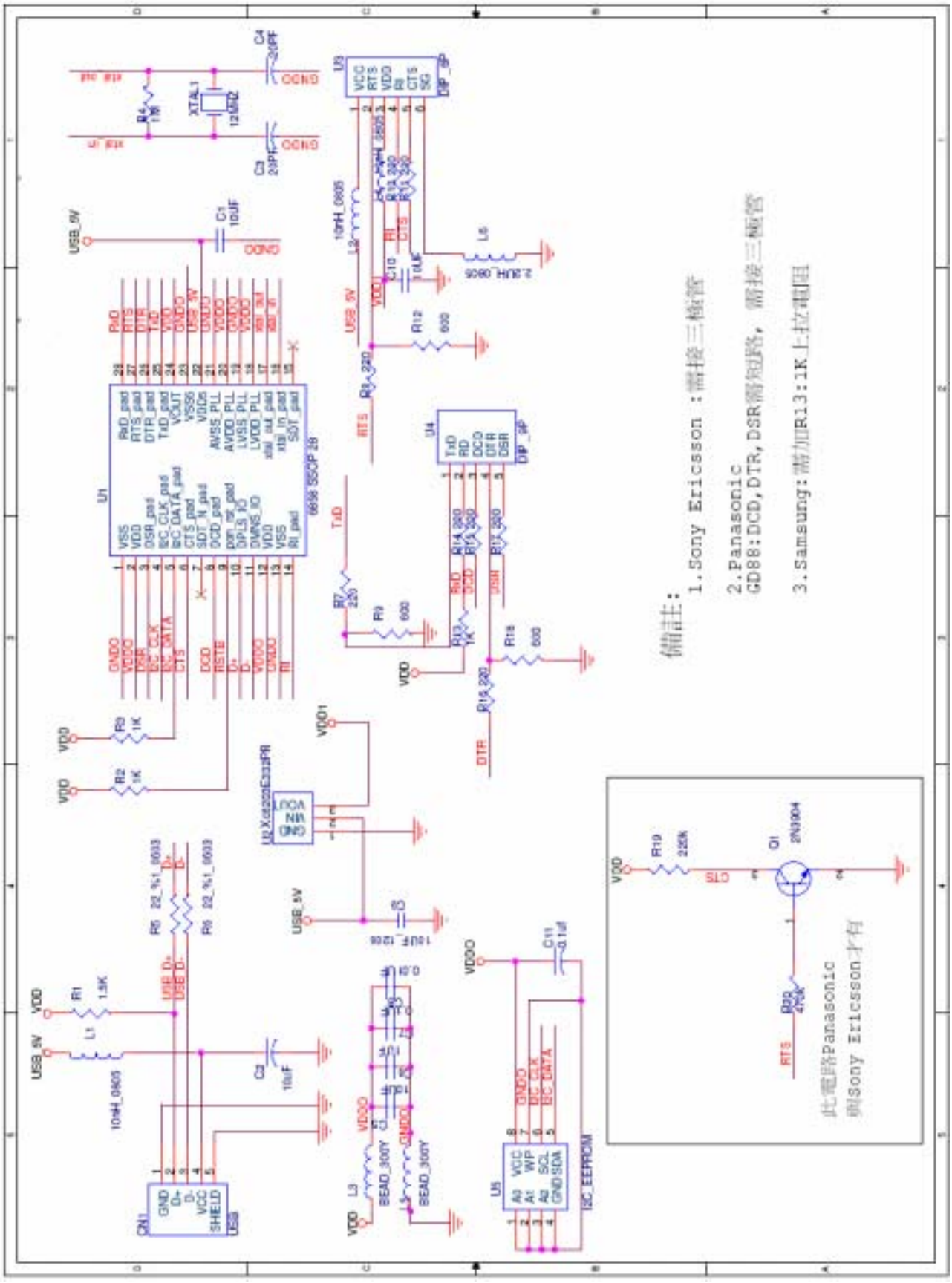
AC Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Output Rising Time	T_{lh}	1.43(10pF)	2.16(10pF)	3.44(10pF)	ns
Output Falling Time	T_{hl}	2.48(10pF)	3.77(10pF)	6.71(10pF)	ns

Temperature Characteristics

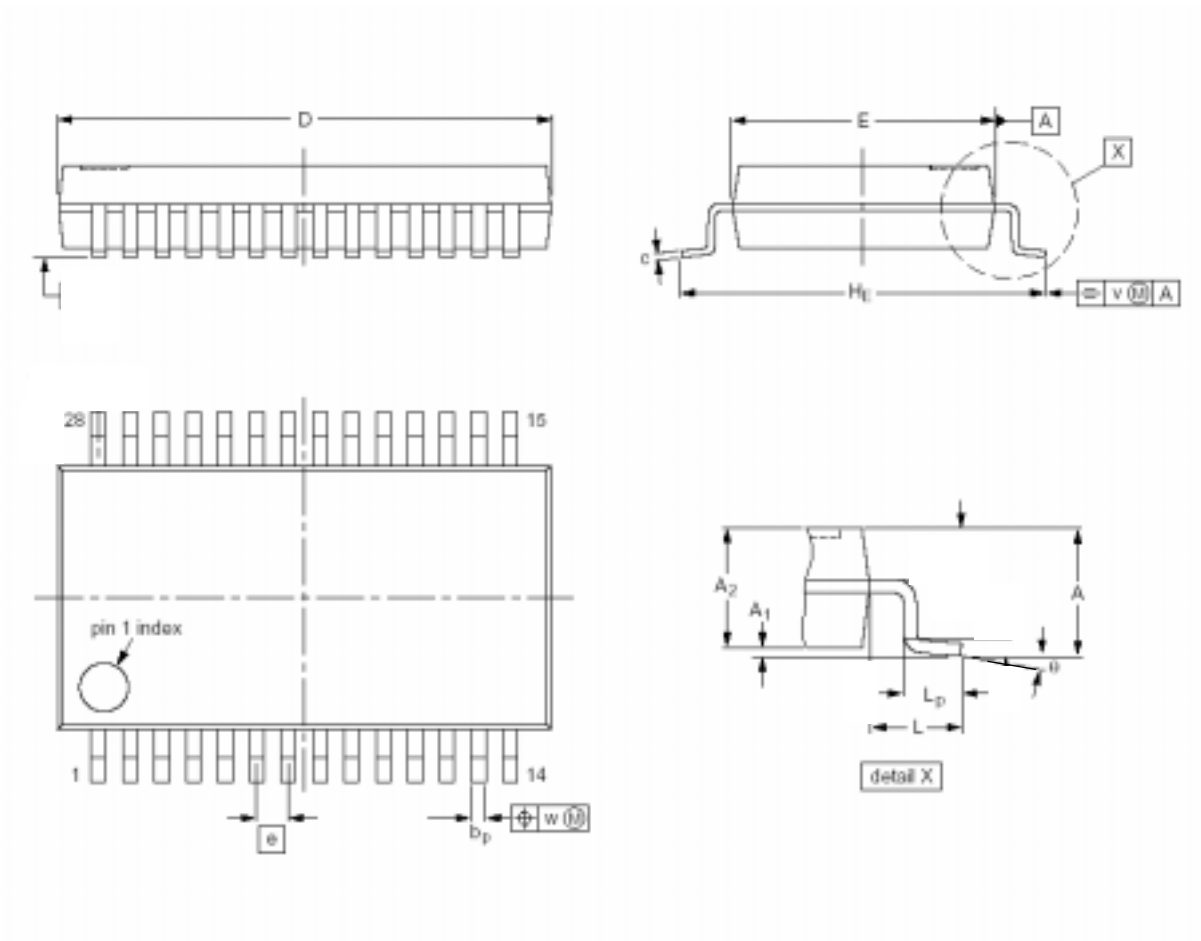
Parameter	Symbol	Min	Typ	Max	Units
Operating	Ta	0		70	°C
Storage	Ts	-55		+150	°C

■ APPLICATION CIRCUIT



■ PACKAGE INFORMATION

SSOP-28: plastic shrink small outline package; 28 leads; body width 5.3 mm



DIMENSIONS (mm are the original dimensions)

UNIT	A Max.	A_1	A2	b_P	c	D	E	H_E	e	L_P	θ
mm	2.0	0.05	1.62 1.85	0.22 0.38	0.09 0.25	9.9 10.5	5.0 5.6	7.4 8.2	0.65 BSC	0.55 0.95	0° 8°

■ MARKING INFORMATION

LINE A **OTI006858**

Product code

LINE B **X X X X X X X X X X X X X**

Date code: yyww

Second version code

First version code

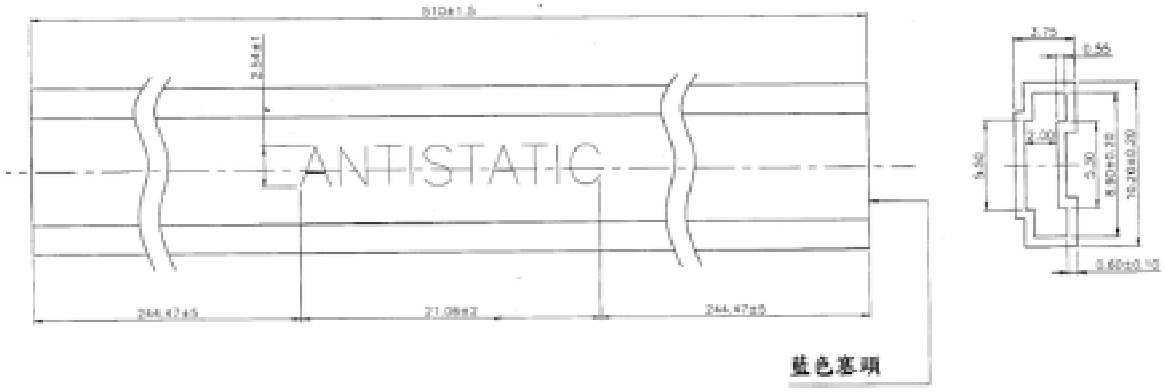
■ PACKING INFORMATION

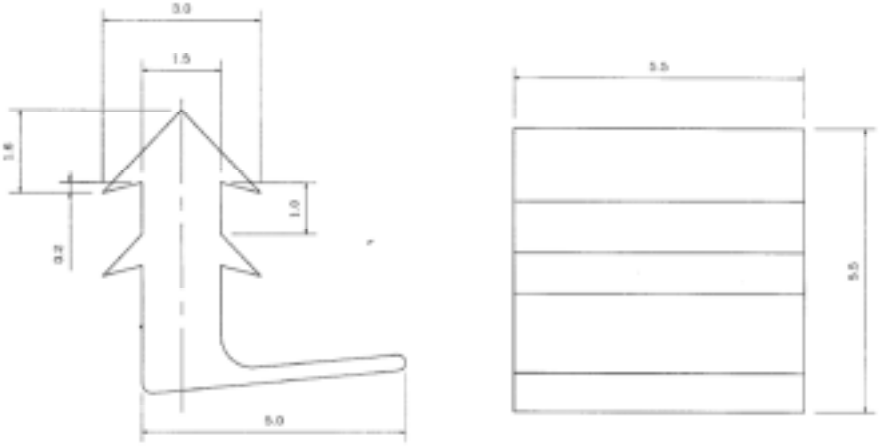
說　　明:

1. 管子:PVC塗佈抗靜電液
2. 顏色:管子-透明;文字-藍色
3. 表面阻抗: 10^{8}-10^{11} Ω/□
4. 管口沒有毛刺
5. 藍色塞頭(3088-060-01681)由廠家於出貨時塞入右端,尾巴朝下(如上圖示),另一白色塞頭則隨貨附送.

REMARK :

1.TUBE MTL : PVC,COATING WITH ANTISTATIE LIQUID.
2.COLOR : TUBE - TRANSPARENT ; MARK - BLUE
3.SURFACE RESISTANCE : 10^{8}-10^{11} Ω/□
4.NO BURR AT CUTTING AREA.
5.THE TUBE SHALL WITH BLUE END-PLUG(3088-060-01681) FROM VENDOR, TAIL DOWNWARD AND THE OTHER ONE ENCLOSE TOGETHER WITH SHIPMENT.





說明:

1. 軟塞顏色:藍色
2. 材　料 :PPR48

REMARK:

1. COLOR :BLUE
2. MT'L :PPR48

標題

P1

6858
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SSOP PACKING INFORMATION