

## Features

- Lead free
- RoHS compliant\*
- 9 RC termination circuits to IEEE 1284 standard
- Stable thin-film-on-silicon technology
- Ultra-miniature packages to JEDEC standards

## Applications

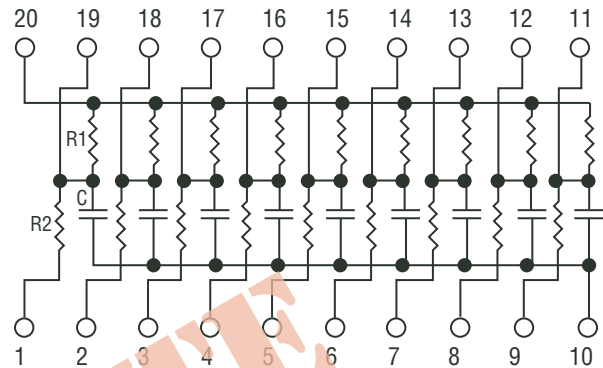
- Bidirectional parallel port communications
- Specially designed for PC/printer interface
- Ideal for space-constrained applications

# Thin Film on Silicon 2CTE IEEE 1284 Terminator

### General Information

The IEEE 1284 Terminator is used to provide filtering and pull-up termination on bidirectional, high-speed parallel ports connecting computer to printer. These Silicon-based, Tantalum-Nitride resistors and capacitors feature excellent stability, temperature coefficients and tracking performance. This product series conforms to JEDEC standards.

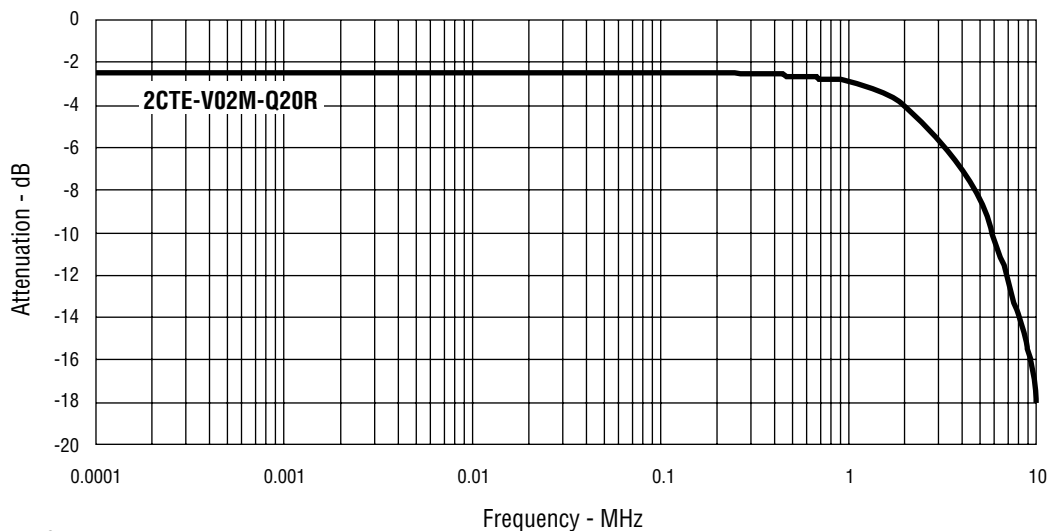
### Package Schematic



### Electrical & Environmental Characteristics

Electrical Characteristics	Symbol	Minimum	Nominal	Maximum	Unit
Resistance Range	R	10		4.7K	$\Omega$
Resistor Tolerance			$\pm 10\%$		$\Omega$
Power Rating per Resistor @ 70 °C				0.1	Watt
Capacitor Range	C	33		220	pF
Capacitor Tolerance			$\pm 20\%$		pF
Capacitor Breakdown Voltage		25	35		V
Operating Voltage				50	V
<b>Environmental Characteristics</b>					
ESD		2 K			V
Operating Temperature	$T_J$	-55		+125	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-65		+150	$^{\circ}\text{C}$
Power Rating per Package @ 70 °C				1.0	Watt

### Filter Response



\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex

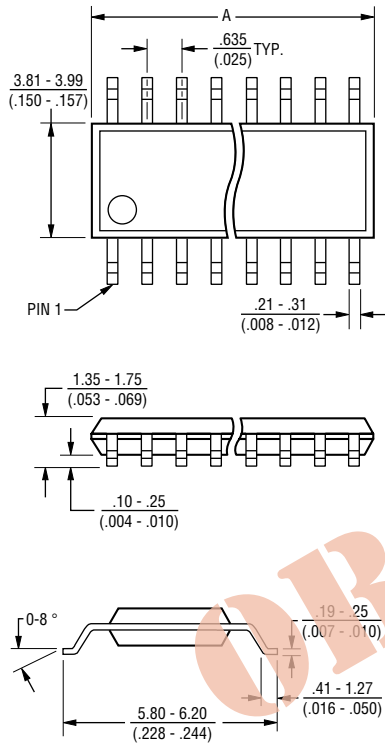
Specifications are subject to change without notice.  
Customers should verify actual device performance in their specific applications.

# Thin Film on Silicon 2CTE IEEE 1284 Terminator

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## Mechanical Characteristics

## QSOP Package Dimensions

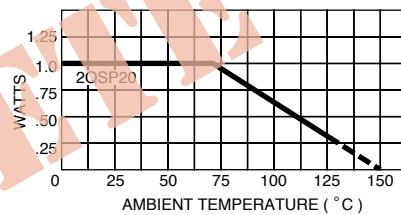


Model	A
2QSP20	8.56 - 8.74 (.337 - .344)

Governing dimensions are in mm. Dimensions in parentheses are in inches and are approximate.

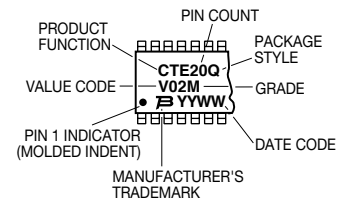
JEDEC Reference Number MO-137.

## QSOP Package Power Temperature Derating Curve



## Typical Part Marking

Represents total content. Layout may vary.



## Standard RC Values

Value Code	R1 Value (ohms)	R2 Value (ohms)	C1 Value (pF)	Cap. BV (typ.)	Part Number (Tape & Reel)	Part Number (Tubes)
V01	1 K	33	180	25	2CTE-V01M-Q20R	2CTE-V01M-Q20T
V02	2.2 K	33	220	25	2CTE-V02M-Q20R	2CTE-V02M-Q20T
V03	4.7 K	10	180	25	2CTE-V03M-Q20R	2CTE-V03M-Q20T
V04	4.7 K	33	180	25	2CTE-V04M-Q20R	2CTE-V04M-Q20T
V05	4.7 K	270	33	25	2CTE-V05M-Q20R	2CTE-V05M-Q20T
V08	1 K	33	47	25	2CTE-V08M-Q20R	2CTE-V08M-Q20T
V09	2.2 K	33	47	25	2CTE-V09M-Q20R	2CTE-V09M-Q20T

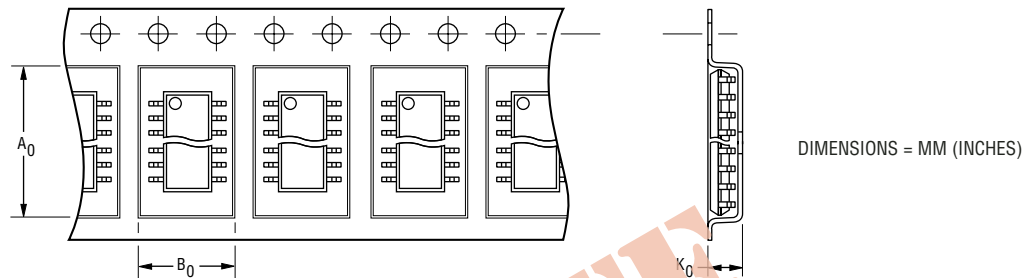
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## Dispensing

For large quantities, the product will be dispensed in Tape and Reel (see diagram below).



Package	A <sub>0</sub>	B <sub>0</sub>	K <sub>0</sub>	Width	Pitch	No. of Pieces per 13 reel	No. of Pieces per tube
QSOP 20 Pin	6.5 (0.256)	9.0 (0.354)	2.1 (0.083)	16 (0.630)	8 (0.315)	3,500	56

## How To Order

**2 CTE-V02 M-Q 20 R LF**

Product Class \_\_\_\_\_  
Thin-Film-on-Silicon

Product Function \_\_\_\_\_  
CTE = IEEE 1284 Terminator

Value Code \_\_\_\_\_  
(Refer to Standard RC Value Table)

Standard Grade \_\_\_\_\_  
R Tol. C Tol.  
M = ±10 % ±20 %

Standard Package Style \_\_\_\_\_  
Q = QSOP

Pin Count \_\_\_\_\_  
Q = 20

Dispensing \_\_\_\_\_  
R = Reel  
T = Tube

Terminations \_\_\_\_\_  
LF = 100 % Sn (lead free)



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