



Features

- Lead free as standard
- RoHS compliant*
- Leadless
- High speed

Applications

- Cellular phones
- PDAs
- Desktop PCs and notebooks
- Digital cameras
- MP3 players

Switching Chip Diode Series - 0603 / 1005

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers small-signal high-speed Switching Diodes for switching digital signal applications, in compact chip package 0603 and 1005 size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Switching Diodes offer a forward current of 100 mA or 150 mA, a reverse voltage of 80 V or 75 V and also have a low leakage reverse current option. The diodes are lead-free with Cu/Ni/Au plated terminations and are compatible with lead-free manufacturing processes, conforming to many industry and government regulations on lead-free components.

Bourns® Chip Diodes conform to JEDEC standards, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDxxxx-S0180	CDxxxx-S01575	CDxxxx-S0180R	Unit
Forward Voltage (Max.)	V _F	1.00 (I _f = 100 mA)	1.00 (I _f = 50 mA)	1.00 (I _f = 100 mA)	V
Capacitance Between Terminals (Max.)	C _T	4 (f = 100 MHz, V _r = 1 V DC)			pF
Reverse Recovery Time (Max.)	t _{rr}	4 (V _r = 6V, I _f = 10 mA, R _L = 50 Ω)			nS
Reverse Current (Max.)	I _R	0.1 (V _r = 80 V)	2.5 (V _r = 75 V)	0.05 (V _r = 75 V)	μA

Absolute Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDxxxx-S0180	CDxxxx-S01575	CDxxxx-S0180R	Unit
Repetitive Peak Reverse Voltage	V _{RRM}	90	100	90	V
Reverse Voltage	V _R	80	75	80	V
Average Forward Current	I _O	100	150	100	mA
Forward Current, Surge Peak	I _{surge}	1*	4**	1*	A
Power Dissipation - CD0603	PD	150	150	150	mW
Power Dissipation - CD1005		300	300	300	
Storage Temperature	T _{STG}	-40 to +125			°C
Junction Temperature	T _J	-40 to +125			°C

* Condition: 8.3 ms single half sine-wave superimposed on rate load (JEDEC method).

** Condition: 1.0 μs single half sine-wave superimposed on rate load (JEDEC method).

How To Order

CD 0603 - S 01 80 R

Common Code _____
Chip Diode

Package _____
• 0603
• 1005

Model _____
S = High Speed Switching

Average Forward Current (I_O) Code _____
01 = 100 mA
015 = 150 mA
(Code x 1000 mA = Average Forward Current)

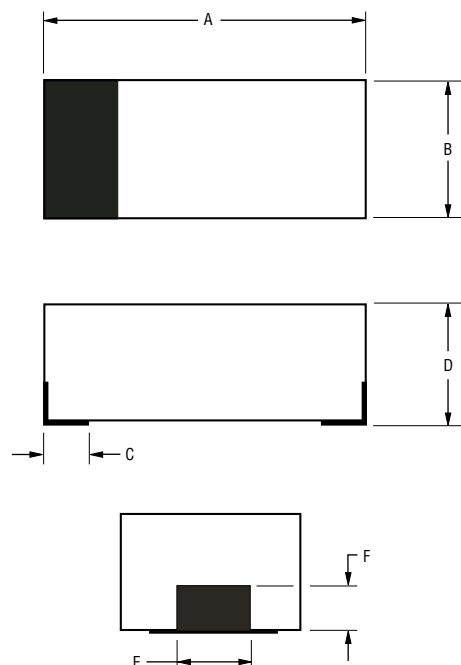
Reverse Voltage (V_R) Code _____
80 = 80 V
75 = 75 V

Reverse Current Suffix _____
R = Low Leakage I_R (CDxxxx-S0180R)

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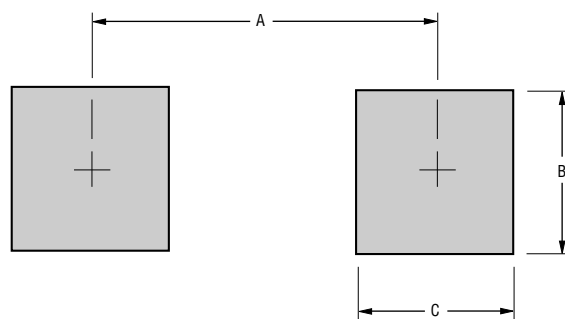
Product Dimensions



Dimension	0603	1005
A	$\frac{1.60 - 1.80}{(0.063 - 0.071)}$	$\frac{2.40 - 2.60}{(0.095 - 0.102)}$
B	$\frac{0.80 - 1.00}{(0.031 - 0.039)}$	$\frac{1.10 - 1.30}{(0.043 - 0.051)}$
C	$\frac{0.25}{(0.010)} \text{ Typ.}$	$\frac{0.35}{(0.014)} \text{ Typ.}$
D	$\frac{0.70 - 0.85}{(0.027 - 0.033)}$	$\frac{0.70 - 0.90}{(0.027 - 0.035)}$
E	$\frac{0.35}{(0.014)} \text{ Typ.}$	$\frac{0.35}{(0.014)} \text{ Typ.}$
F	$\frac{0.30}{(0.012)} \text{ Typ.}$	$\frac{0.30}{(0.012)} \text{ Typ.}$

DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Recommended Pad Layout



Dimension	0603	1005
A (Max.)	$\frac{1.70}{(0.067)}$	$\frac{2.10}{(0.082)}$
B (Min.)	$\frac{0.80}{(0.031)}$	$\frac{1.20}{(0.047)}$
C (Min.)	$\frac{0.60}{(0.024)}$	$\frac{1.20}{(0.047)}$

DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Physical Specifications

Case0603(1608) / 1005(2512) Molded plastic
 TerminalsSolder plated, solderable per MIL-STD-750,
 Method 2026
 PolarityIndicated by cathode band
 Mounting PositionAny

Typical Part Marking

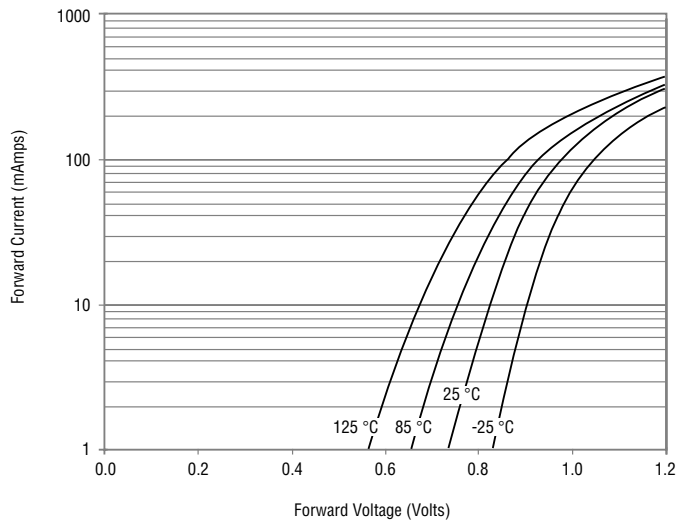
CDxxxx-S0180S1
 CDxxxx-S01575S3
 CDxxxx-S0180RS2

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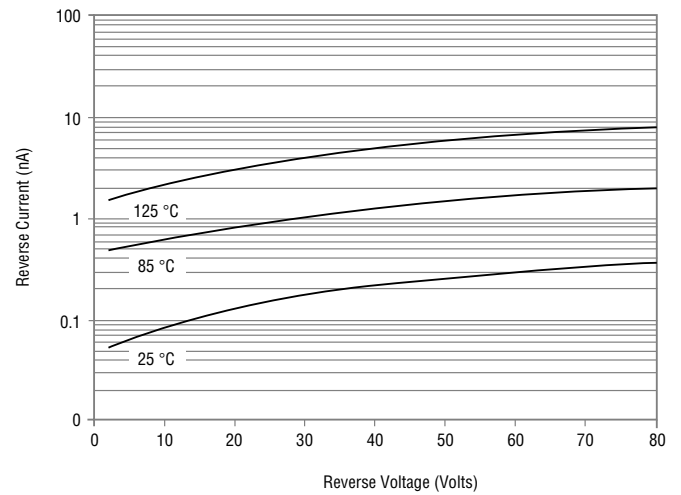
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Rating and Characteristic Curves: CDxxxx-S0180

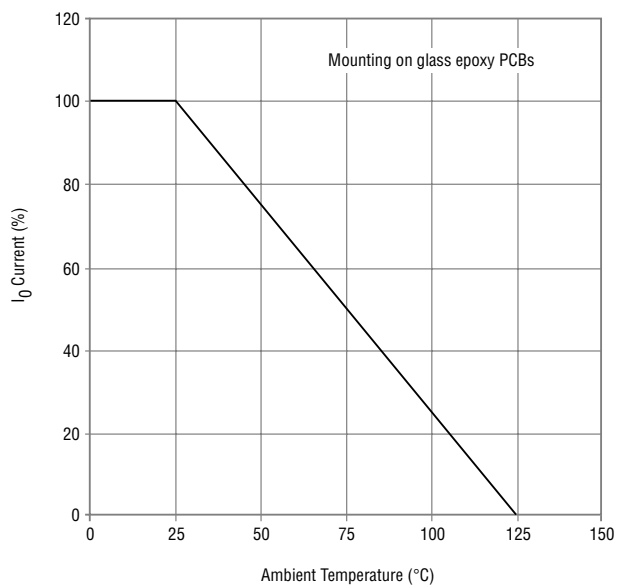
Forward Characteristics



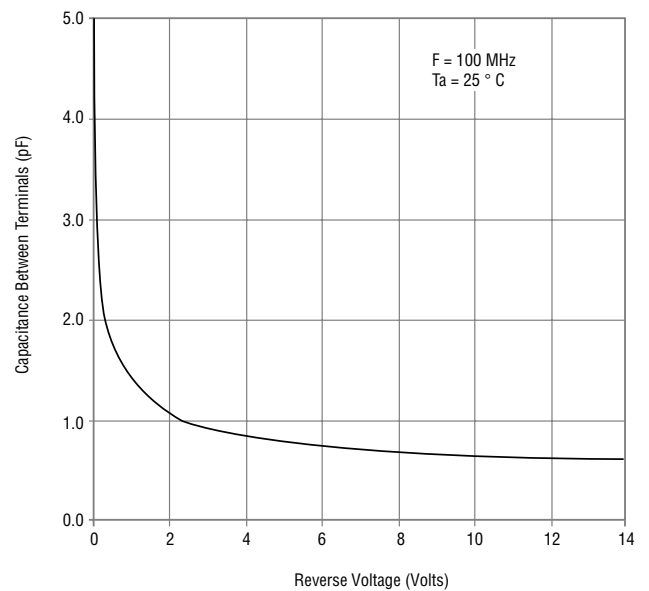
Reverse Characteristics



Derating Curve



Capacitance Between Terminals

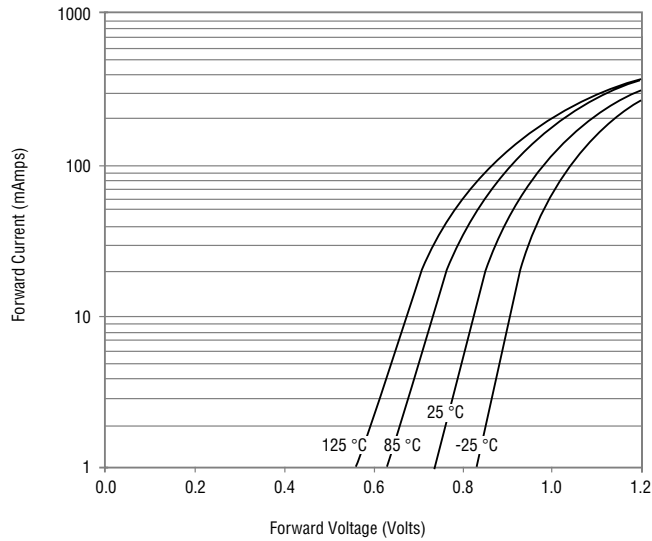


Switching Chip Diode Series - 0603 / 1005

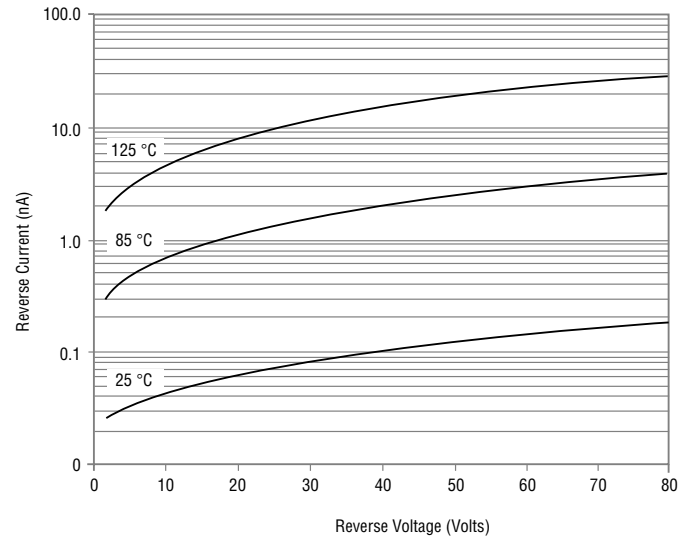
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Rating and Characteristic Curves: CDxxx-S01575

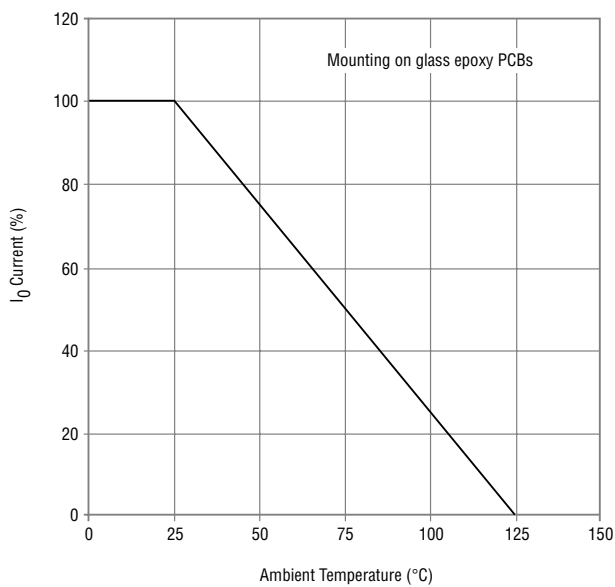
Forward Characteristics



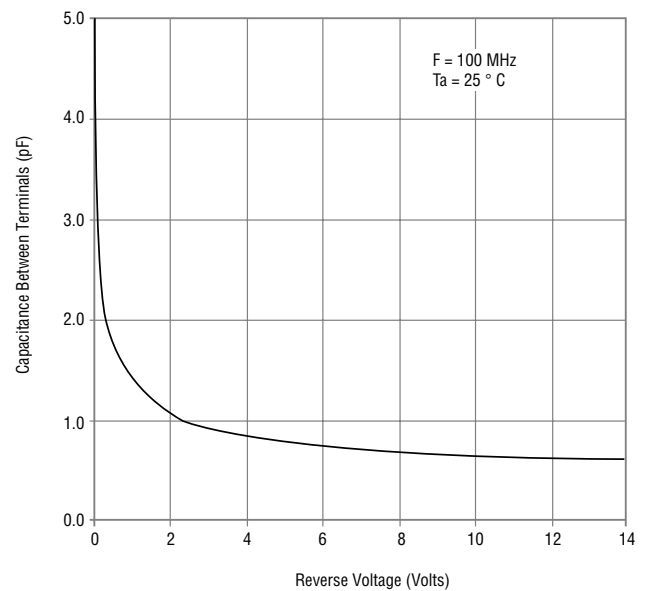
Reverse Characteristics



Derating Curve



Capacitance Between Terminals

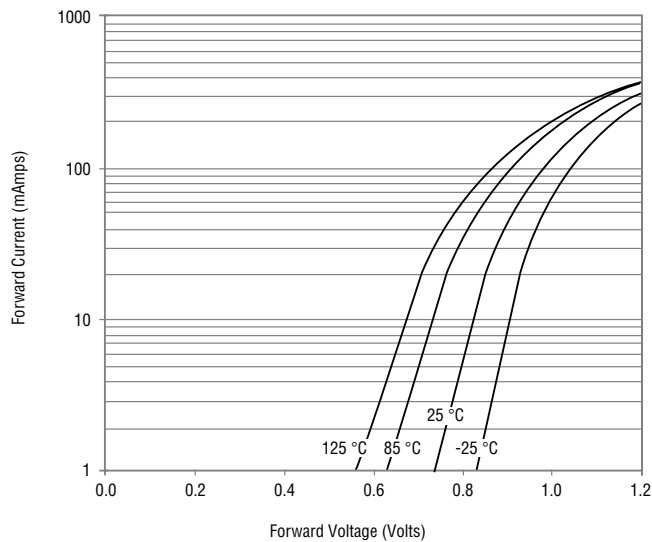


Switching Chip Diode Series - 0603 / 1005

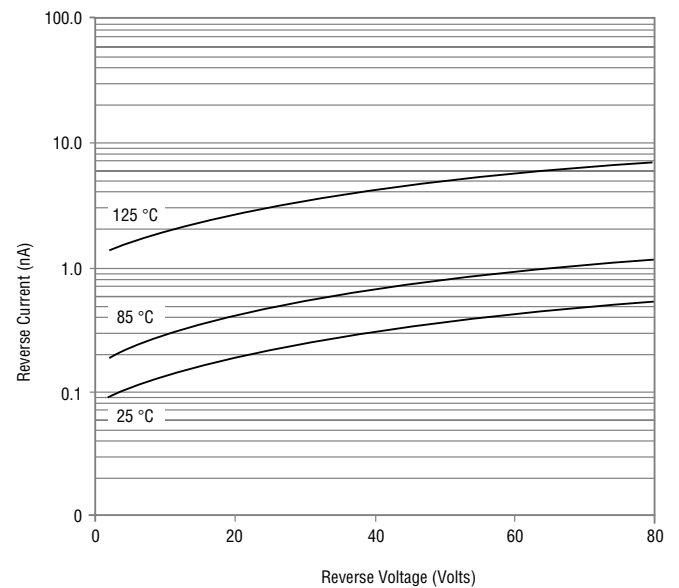
BOURNS®

Rating and Characteristic Curves: CDxxx-S0180R

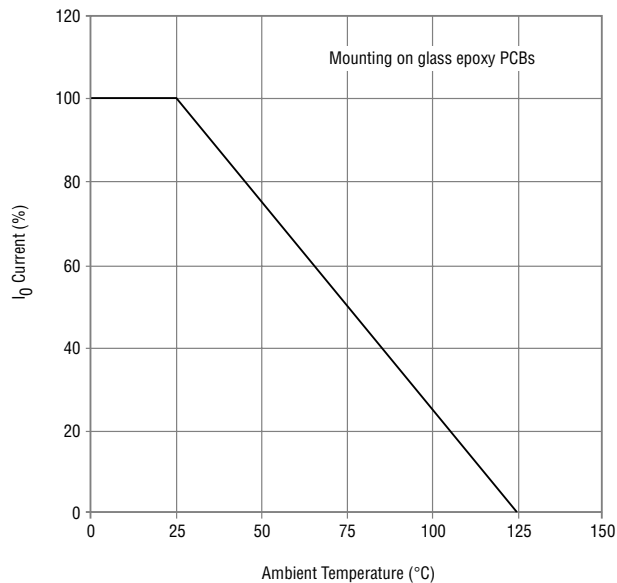
Forward Characteristics



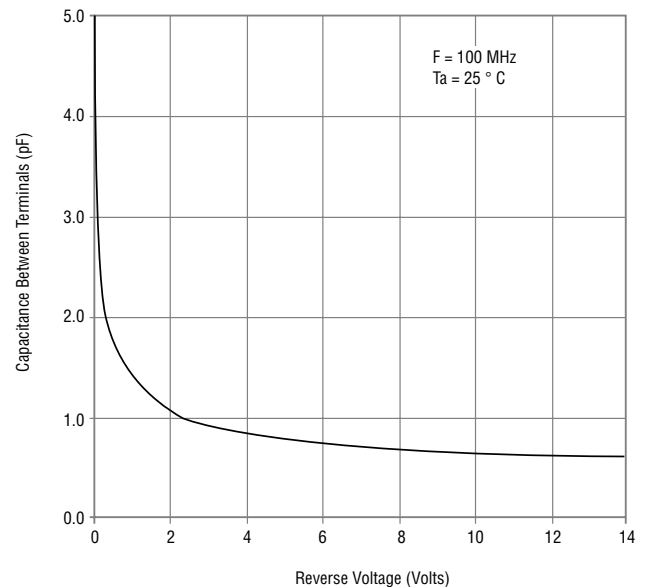
Reverse Characteristics



Derating Curve



Capacitance Between Terminals

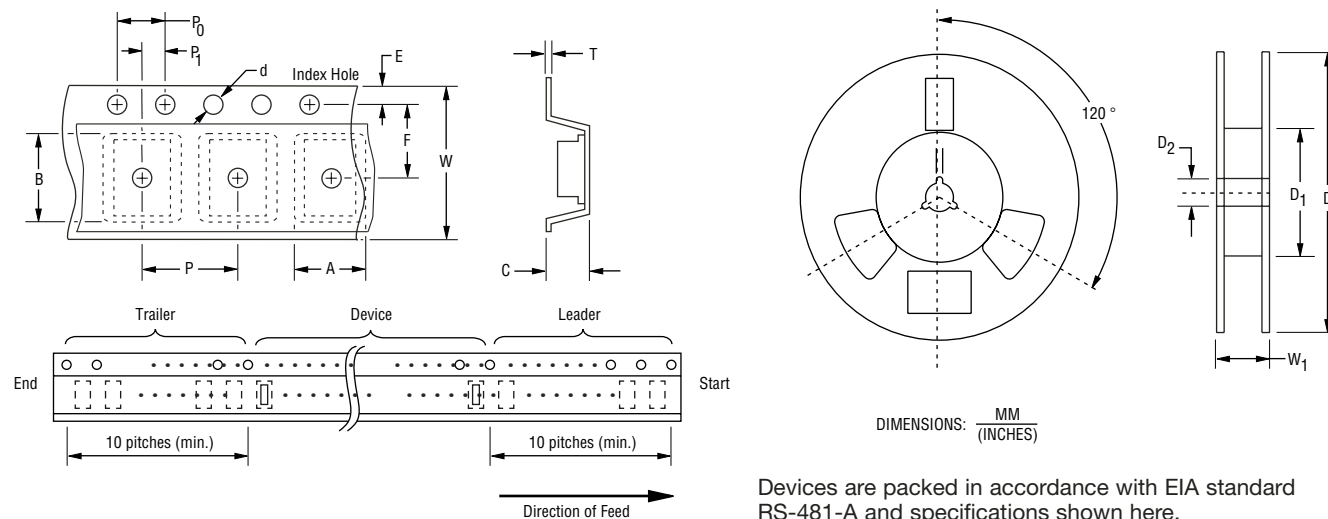


Switching Chip Diode Series - 0603 / 1005

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Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).



Item	Symbol	0603	1005
Carrier Width	A	$\frac{1.00 \pm 0.10}{(0.039 - 0.004)}$	$\frac{1.55 \pm 0.10}{(0.061 - 0.004)}$
Carrier Length	B	$\frac{1.85 \pm 0.10}{(0.073 - 0.004)}$	$\frac{2.65 \pm 0.10}{(0.104 - 0.004)}$
Carrier Depth	C	$\frac{1.00 \pm 0.10}{(0.039 - 0.004)}$	$\frac{1.05 \pm 0.10}{(0.041 - 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 - 0.002)}$	$\frac{1.55 \pm 0.10}{(0.061 - 0.004)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$	$\frac{178}{(7.008)}$
Reel Inner Diameter	D ₁	$\frac{60.0}{(2.362)} \text{ MIN.}$	$\frac{60.0}{(2.362)} \text{ MIN.}$
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.05}{(0.008 - 0.002)}$	$\frac{0.25 \pm 0.05}{(0.010 - 0.002)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$
Reel Width	W ₁	$\frac{13.5}{(0.531)} \text{ MAX.}$	$\frac{13.5}{(0.531)} \text{ MAX.}$
Quantity per Reel	--	4,000	4,000



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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