

Features

- Low forward voltage drop, high efficiency
- Low reverse leakage current
- High peak forward surge current (I_{FSM})
- Reduced EMI
- Maximum operating T_J up to 175 °C
- Epoxy compound is flame retardant to the UL 94V-0 standard
- RoHS compliant*, Pb free and halogen free**

Applications

- Switched-Mode Power Supplies (SMPS)
- Power Factor Correction (PFC)
- PV inverters
- DC-DC converters
- Telecommunications
- Motor drives

BSDL10S65E6 Silicon Carbide Schottky Diode

General Information

Bourns® Model BSDL10S65E6 Silicon Carbide (SiC) Schottky Diode provides excellent current carrying capacity. This advanced, high efficiency power component is suitable for applications such as converters requiring a high peak forward surge capability, low forward voltage drop, reduced thermal resistance and low power loss.

Bourns offers Silicon Carbide Schottky Diodes for rectification applications in assorted styles. The Model BSDL10S65E6 is available in a DFN8x8 package, well-suited for high frequency Switched-Mode Power Supplies.

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

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

Parameter	Symbol	BSDL10S65E6	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Average Forward Current (Square Wave Pulse, D = 0.5, T_c ≤153 °C, Fig. $Zth_{(J-c)}$)	$I_{F(AV)}$	10	A
Repetitive Peak Forward Current (Square Wave Pulse, D = 0.5, T_c ≤153 °C, t_p = 25 µs, Fig. $Zth_{(J-c)}$)	I_{FRM}	20	A
Non-Repetitive Peak Forward Surge Current (10 ms, Single Sine-Wave Pulse)	I_{FSM}	75	A
Total Power Dissipation	P_{tot}	157.8	W
Operating Junction Temperature Range	T_J	-55 to +175	°C
Storage Temperature	T_{STG}	-55 to +175	°C

Thermal Characteristics

Parameter		Symbol	Condition or Model	Min.	Typ.	Max.	Unit
Thermal Resistance	Junction to Ambient	$R_{θ(J-A)}$	In ambient air		60		°C/W
	Junction to Case	$R_{θ(J-c)}$	Transient thermal impedance curves		0.7	0.95	

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

Parameter	Symbol	Condition or Model	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 10 A, T_J = 25 °C I_F = 10 A, T_J = 175 °C		1.29 1.5	1.45 1.7	V
Reverse Leakage Current	I_R	V_R = 650 V, T_J = 25 °C V_R = 650 V, T_J = 175 °C		1 15	50 200	µA
Recovered Charge	Q_r	dI_F/dt = 500 A/µs, V_R = 400 V, I_F = 10 A		24		nC
Diode Capacitance	C_d	V_R = 1 V, f = 1 MHz		500		pF
Capacitance Stored Energy	E_c	V_R = 400 V		4.9		µJ

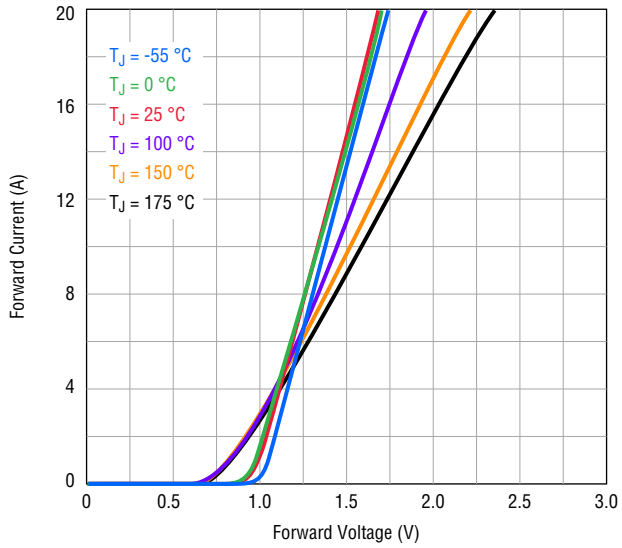
WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
**Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.
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Users should verify actual device performance in their specific applications.
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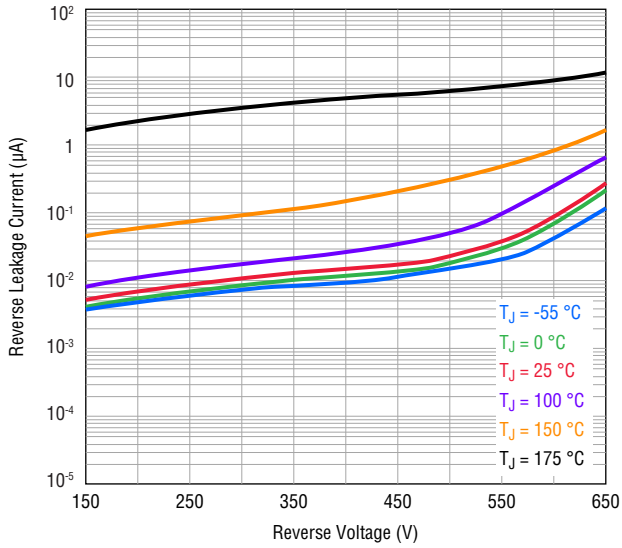
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Rating and Characteristic Curves (T_J = 25 °C unless otherwise noted)

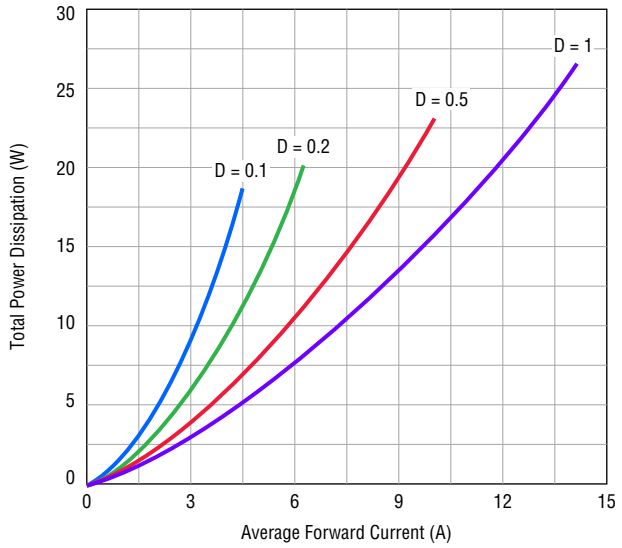
Typical Forward Characteristics



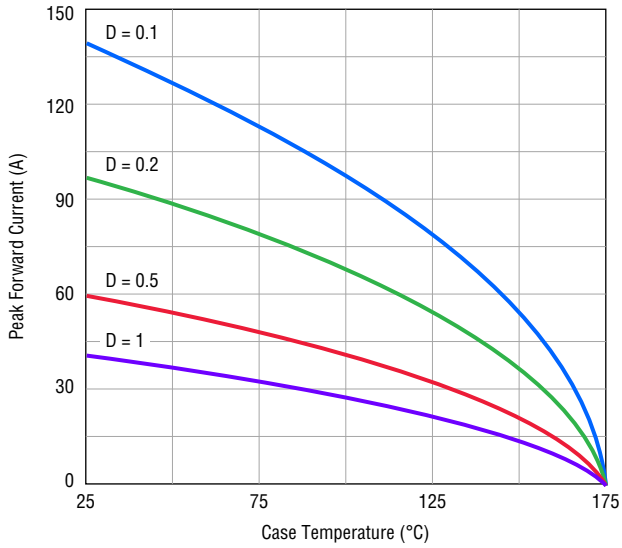
Typical Reverse Characteristics



Forward Power Dissipation



Forward Current Derating

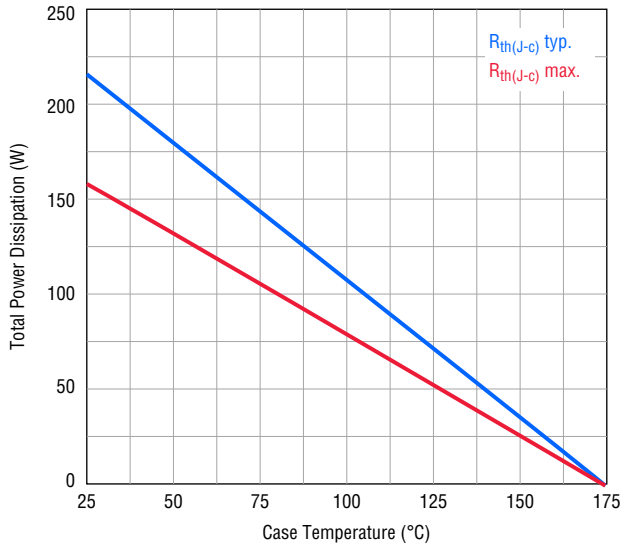


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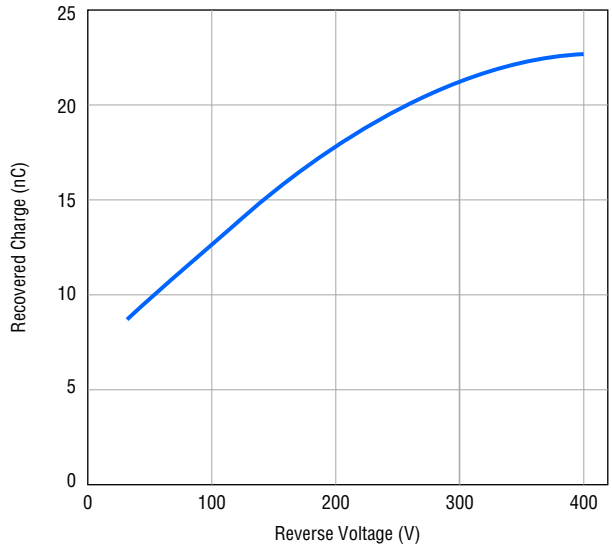
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Rating and Characteristic Curves (Continued)

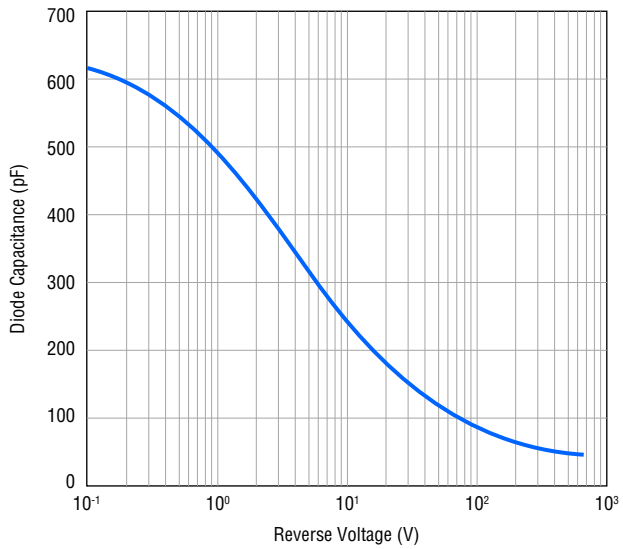
Power Derating



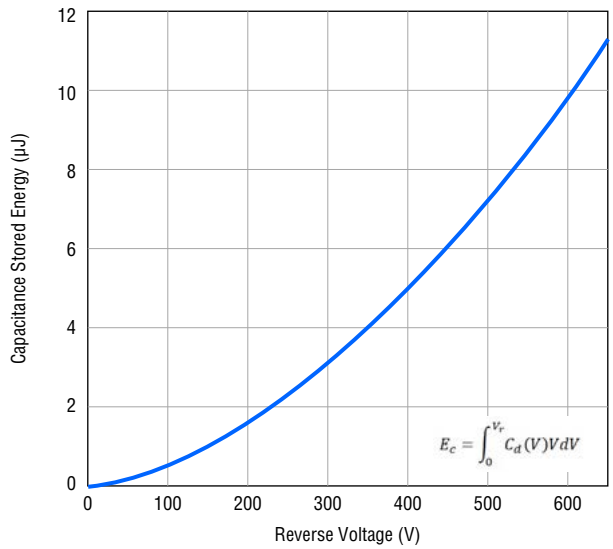
Typical Recovered Charge vs V_R



Typical Diode Capacitance vs V_R



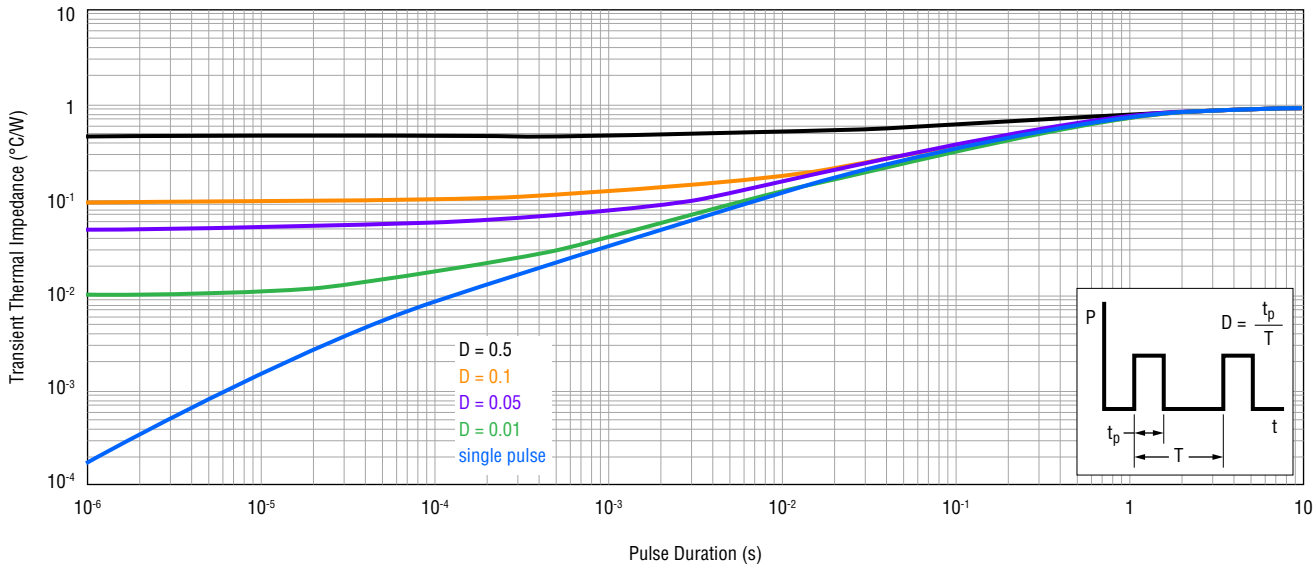
Typical Capacitance Stored Energy vs V_R



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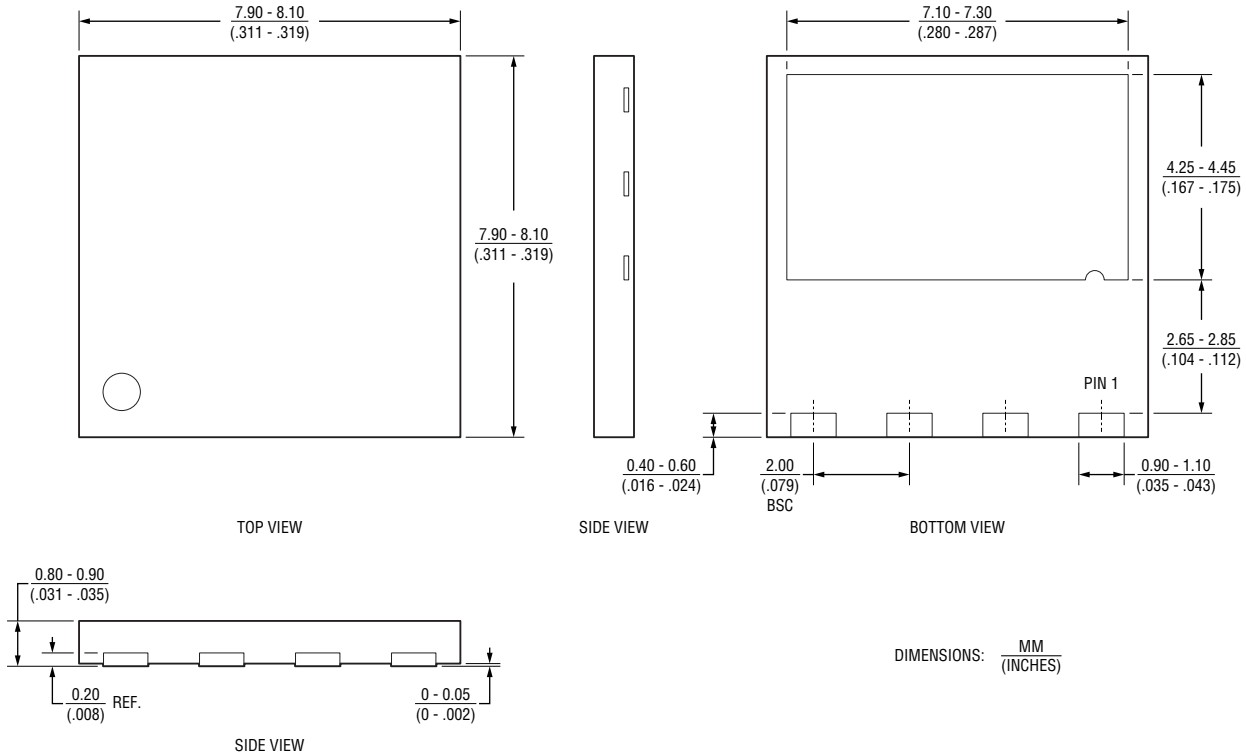
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Transient Thermal Impedance, $Zth_{(J-c)}$



Product Dimensions

Package: DFN8X8



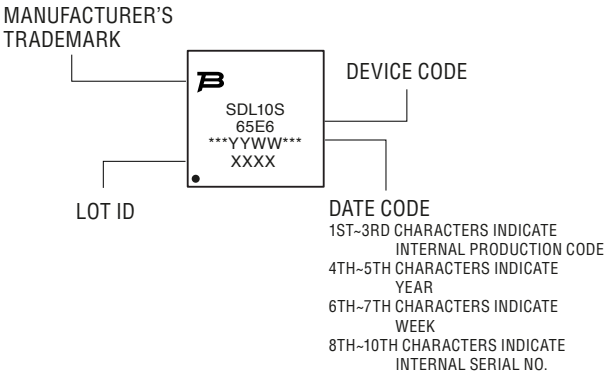
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BSDL10S65E6 Silicon Carbide Schottky Diode

BOURNS®

Typical Part Marking



Environmental Specifications

ESD Classification (HBM).....3B

How to Order

B SD L 10 S 65 E 6

Manufacturer
B = Bourns

Product Type
SD = SiC Diodes

Package Code
L = DFN8x8

Current Rating
10 = 10 A

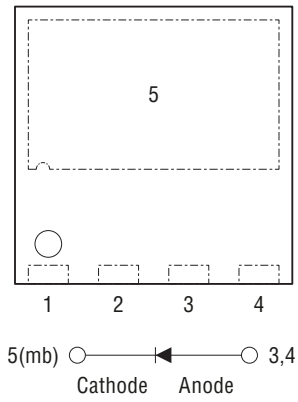
Device Type
S = Low V_F

Nominal Voltage
65 = 650 V

Configuration
E = Single Diode

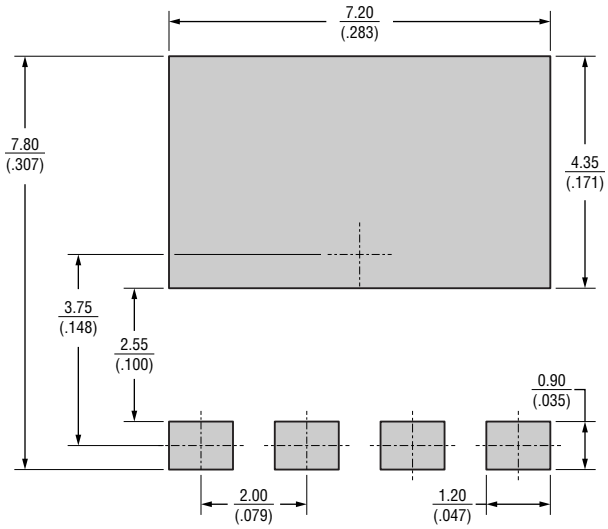
Version Number

Pin Information



1,2: N.C. (Not Connected)

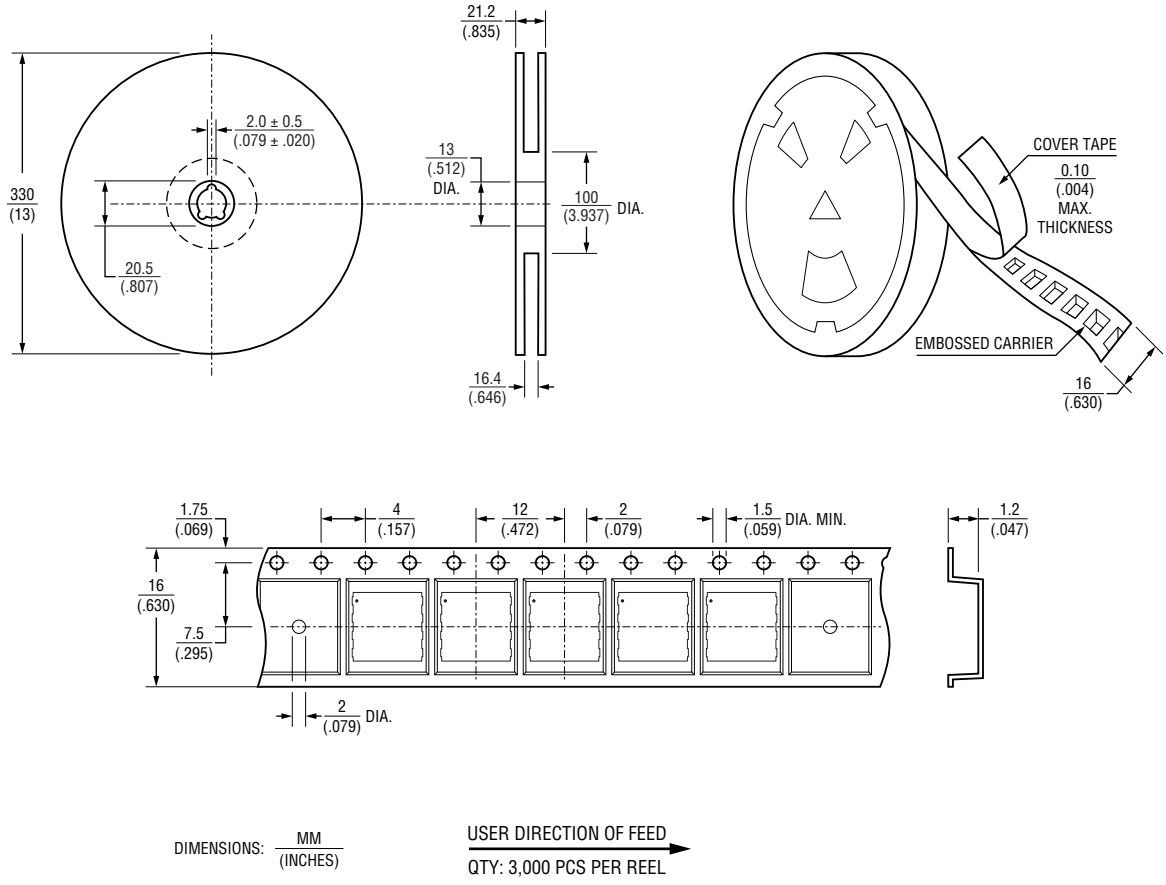
Recommended Footprint



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Packaging Specifications



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