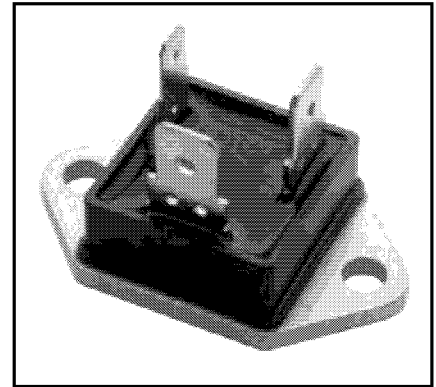
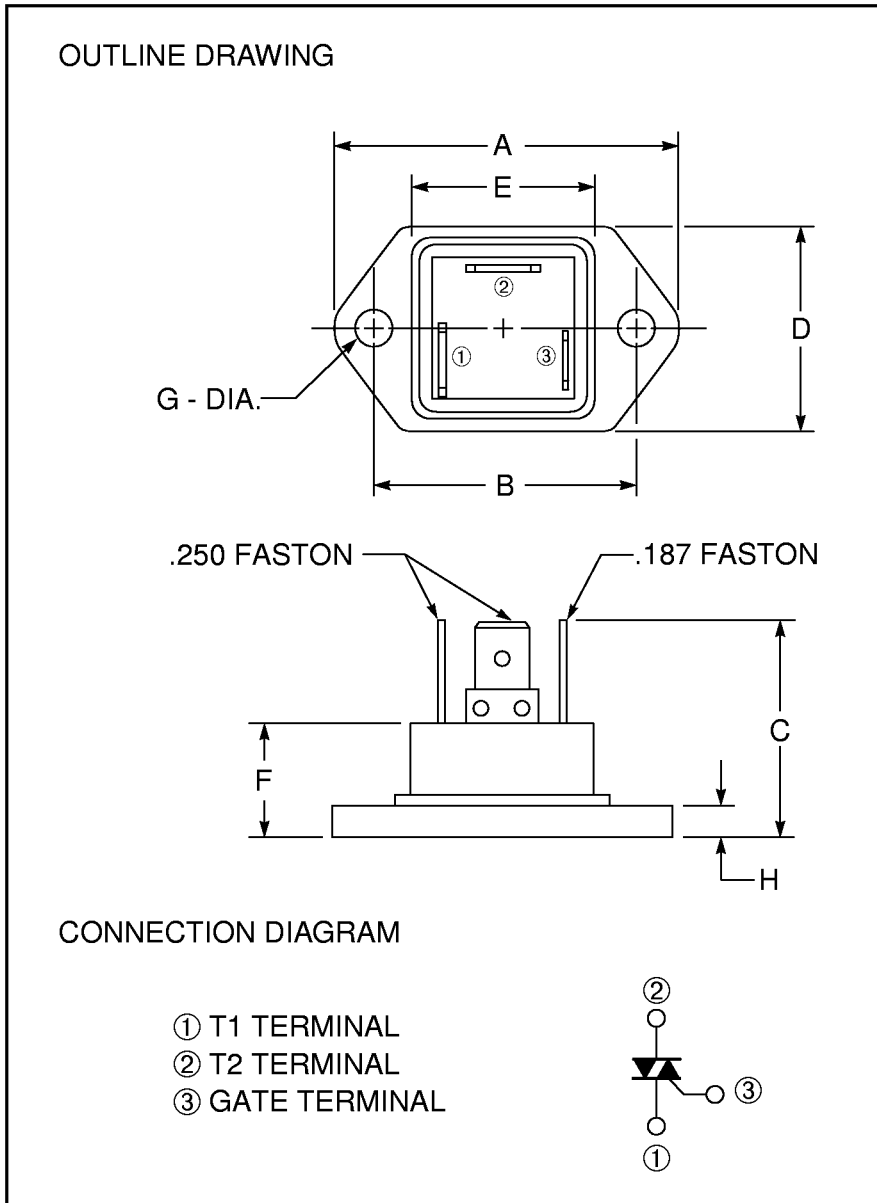


Isolated Triac 16 Amperes/400-600 Volts



Description:

A triac is a solid state silicon AC switch which may be gate triggered from an off-state to an on-state for either polarity of applied voltage.

Features:

- Isolated TO-3 Mounting Flange
- Glass Passivation
- Quick Disconnect Terminals
- 2200 V_{RMS} Isolation Voltage
- Selected for Inductive Loads

Applications:

- AC Switch
- Copiers
- Heating
- Motor Controls
- Lighting

Ordering Information:

Example: Select the complete eight, nine or ten digit part number you desire from the table - i.e. BCR16HM-8 is a 400 Volt, 16 Ampere Triac.

Type	V_{DRM} Volts	Code	Inductive Load*
BCR16HM	400	-8	L
	600	-12	

*For inductive load, add L.

Outline Drawing

Dimensions	Inches	Millimeters
A	1.54 Max.	39.2 Max.
B	1.181 ± 0.008	30.0 ± 0.2
C	0.89 Max.	22.5 Max.
D	0.91 Max.	23 Max.
E	0.80 Max.	20.2 Max.
F	0.43 Max.	11 Max.
G	0.165 Dia.	4.2 Dia.
H	0.10	2.6 Max.

BCR16HM

Isolated Triac

16 Amperes/400-600 Volts

Absolute Maximum Ratings, $T_a = 25\text{ }^\circ\text{C}$ unless otherwise specified

Ratings	Symbol	BCR16HM-8	BCR16HM-12	Units
Repetitive Peak Off-state Voltage	V_{DRM}	400	600	Volts
Non-repetitive Peak Off-state Voltage (Gate Open)	V_{DSM}	500	720	Volts
On-state Current, $T_a = 82\text{ }^\circ\text{C}$	$I_T(\text{RMS})$	16	16	Amperes
Non-repetitive Peak Surge, One Cycle (60 Hz)	I_{TSM}	170	170	Amperes
I^2t for Fusing, $t = 8.3\text{ msec}$	I^2t	121	121	A^2sec
Peak Gate Power Dissipation, $20\text{ }\mu\text{sec}$	P_{GM}	5	5	Watts
Average Gate Power Dissipation	$P_{G(\text{avg})}$	0.5	0.5	Watts
Peak Gate Current	I_{GM}	2	2	Amperes
Peak Gate Voltage	V_{GM}	10	10	Volts
Storage Temperature	T_{stg}	-40 to 125	-40 to 125	$^\circ\text{C}$
Operating Junction Temperature	T_j	-40 to 125	-40 to 125	$^\circ\text{C}$
Isolation Voltage	V_{iso}	2200	2200	Volts
Weight	—	26	26	Grams

Electrical and Thermal Characteristics, $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions (Trigger Mode)			BCR16HM			Units
		V_D	R_L	T_j	Min.	Typ.	Max.	
Gate Parameters								
DC Gate Trigger Current								
MT2+ Gate+	I_{GT}	6V	6Ω	$25\text{ }^\circ\text{C}$	—	—	30	mA
MT2+ Gate-		6V	6Ω	$25\text{ }^\circ\text{C}$	—	—	30	mA
MT2- Gate-		6V	6Ω	$25\text{ }^\circ\text{C}$	—	—	30	mA
DC Gate Trigger Voltage								
MT2+ Gate+	V_{GT}	6V	6Ω	$25\text{ }^\circ\text{C}$	—	—	1.5	Volts
MT2+ Gate-		6V	6Ω	$25\text{ }^\circ\text{C}$	—	—	1.5	Volts
MT2- Gate-		6V	6Ω	$25\text{ }^\circ\text{C}$	—	—	1.5	Volts
DC Gate Non-trigger Voltage								
All	V_{GD}	$1/2 V_{DRM}$	—	$125\text{ }^\circ\text{C}$	2	—	—	Volts

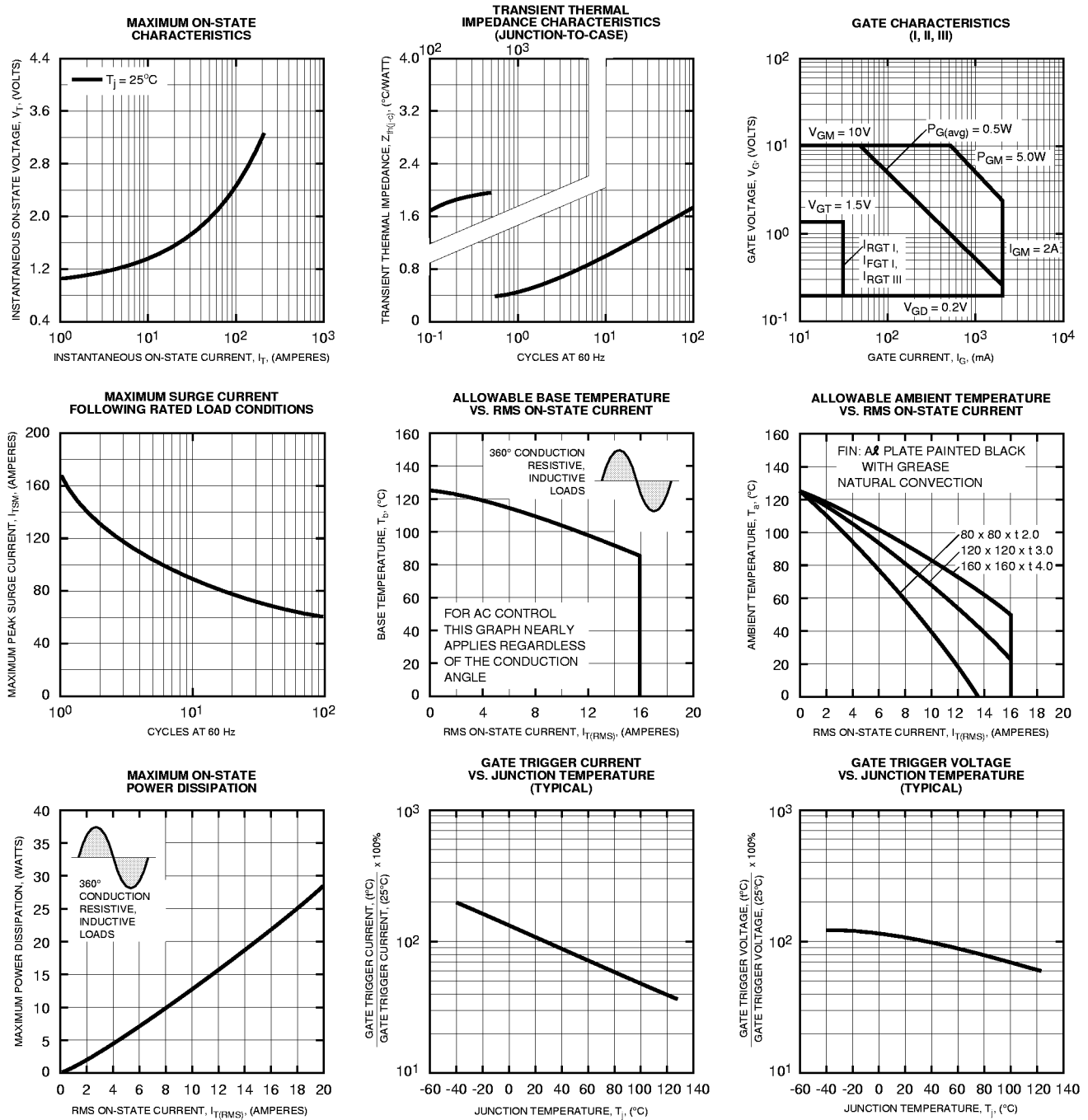
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction-to-base	$R_{th(j-b)}$	—	—	—	2	$^\circ\text{C}/\text{W}$
Voltage – Blocking State Repetitive Off-state Current	I_{DRM}	Gate Open Circuited, $V_D = V_{DRM}$, $T_j = 125\text{ }^\circ\text{C}$	—	—	3	mA
Current – Conducting State Peak On-state Voltage	V_{TM}	$T_c = 25\text{ }^\circ\text{C}$, $I_{TM} = 25\text{A Peak}$	—	—	1.6	Volts
Critical Rate-of-rise of Commutating Off-state Voltage (Commutating dv/dt)	$(dv/dt)_c$	—	—	—	—	$\text{V}/\mu\text{s}$

▲ for inductive load (L)
(Switching)

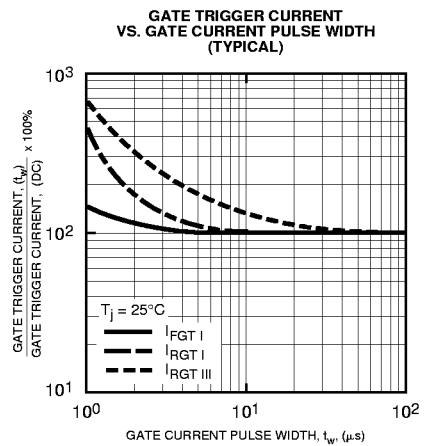
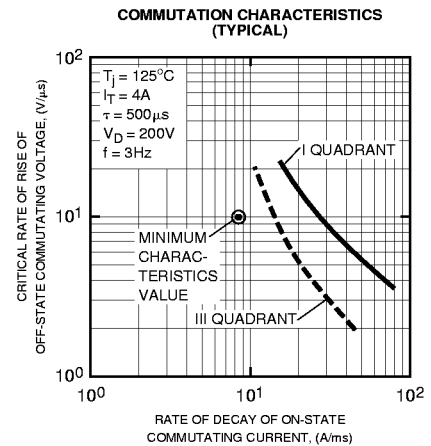
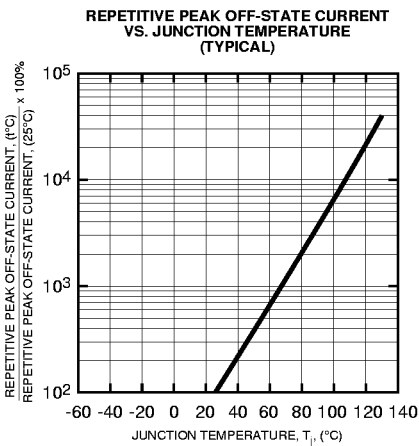
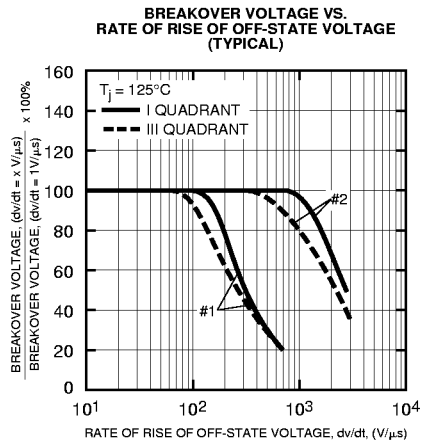
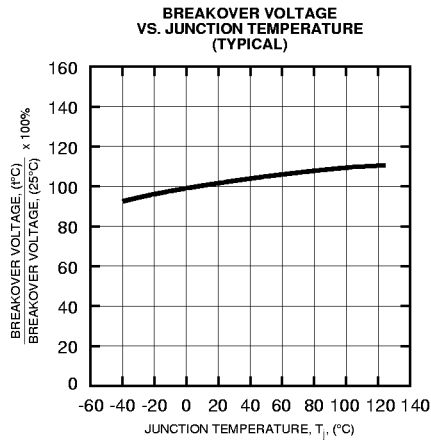
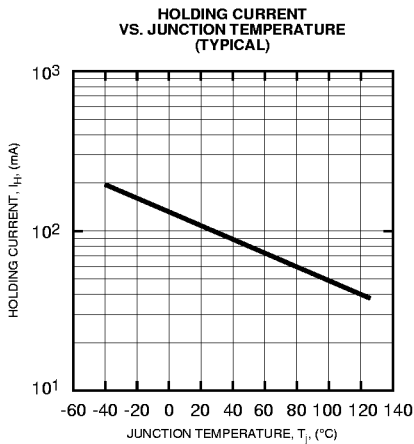


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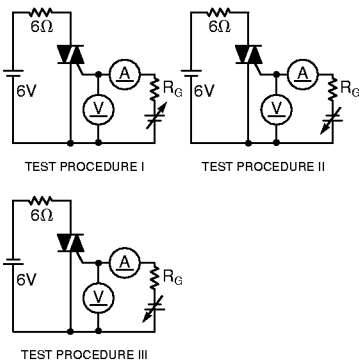
BCR16HM
Isolated Triac
 16 Amperes/400-600 Volts



BCR16HM
Isolated Triac
 16 Amperes/400-600 Volts

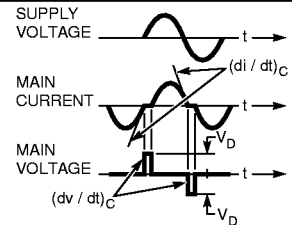


GATE TRIGGER CHARACTERISTICS TEST CIRCUITS



Δ Part Number	Commutating dv/dt, (dv/dt) _C		Test Condition
	V _{DRM} (Volts)	(V/μsec) Minimum	
BCR16HM-8L	400	10	T _J = 125°C, Rate of Decay On-state Commutating Current (di/dt) _C = -8A/msec, Peak Off-state Voltage V _D = 400V
BCR16HM-12L	600	10	

Commutating Voltage & Current Waveform (Inductive Load)





T-91-01

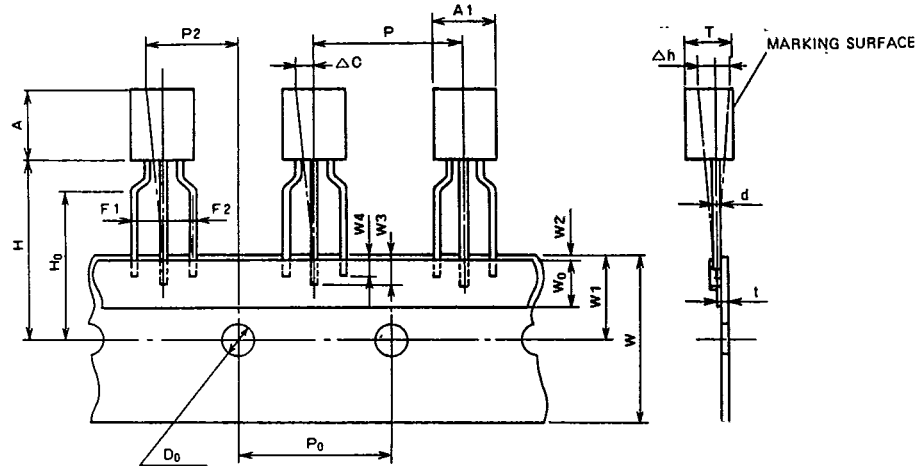
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Taping

STANDARD SPECIFICATIONS FOR TAPING OF MOLDED PACKAGE THYRISTORS AND TRIACS

TO-92 Package

Thyristor
CR02AM, CR03AM, CR04AM
Triac
BCR1AM



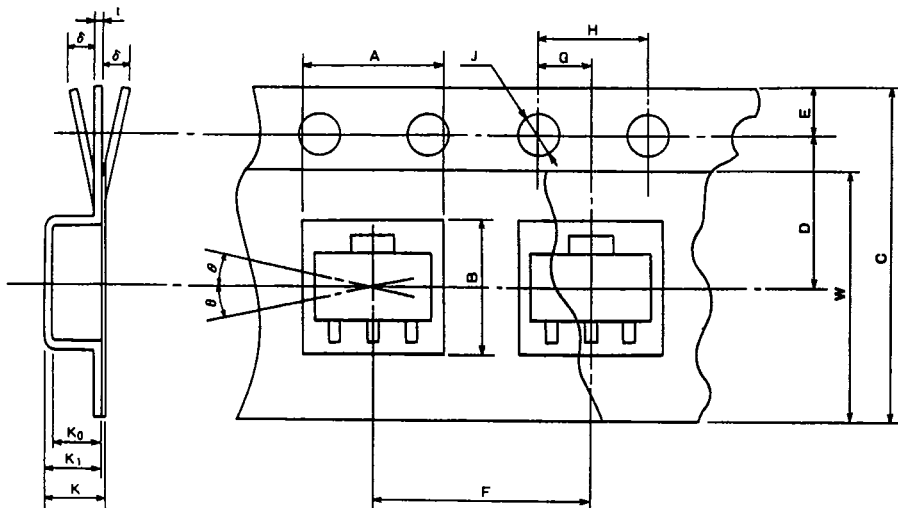
Taping dimensions

Description of symbol	Symbol	Dimensions (Unit:mm)	Remark
Product width	A1	5.0 MAX	
Product height	A	5.0 MAX	
Product thickness	T	3.7 MAX	
Lead wire diameter	d	0.6 MAX	
Sticker lead wire length (1)	W3	2.5 MIN	
Sticker lead wire length (2)	W4	2.0 MIN	
Pitch between products	P	12.7 ± 1.0	
Feed hole pitch	P ₀	12.7 ± 0.3	The cumulative pitch error is ± 1mm per 20 pitches.
Feed hole deviation (1)	P2	6.35 ± 1.3	
Distance between lead wires	F1, F2	2.5 ± 0.4	
Defective product (1)	Δh	0 ± 2.0	
Tape width	W	18.0 ± ^{1.0} / _{0.5}	
Sticker tape width	W ₀	6.0 ± 0.5	
Feed hole deviation (2)	W1	9.0 ± 0.5	
Sticker tape deviation	W2	0.5 MAX	
Position of product bottom surface	H	17.5 MIN	
Lynch height of lead wire	H ₀	16.0 ± 0.5	
Feed hole diameter	D ₀	4.0 ± 0.2	
Tape thickness	t	0.7 ± 0.2	
Defective product (2)	ΔC	0 ± 1.0	



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Powerex Semiconductor Data Book
 Taping



SOT-89 Package

Thyristor
 CR08AS

Taping dimensions

Description of symbol		Symbol	Dimensions/angles Unit:mm	Remark
Parts Insertion	Height	A	5.0 ± 0.1	Cross-section of the surface 0.5mm above the Inner bottom
	Width	B	4.6 ± 0.1	Cross-section of the surface 0.5mm above the inner bottom
Concave square hole	Depth	K ₀	1.8 ± 0.1	Inner space
	Pitch	F	8.0 ± 0.1	Cumulative error +0.1/-0.3 MAX/10 pitches
Round feed hole	Diameter	J	$\phi 1.5 \pm 0.05$	
	Pitch	H	4.0 ± 0.1	Cumulative error +0.1/-0.3 MAX/10 pitches
	Position	E	1.5 ± 0.1	Distance between the tape edge and the hole center
Distance between center lines	Vertical	G	2.0 ± 0.5	Center line of concave square hole and round feed hole
	Horizontal	D	5.65 ± 0.05	Center line of concave square hole and round feed hole
Cover tape	Width	W	$9.5 + 0.3/-0$	Thickness: 0.1 MAX
Carrier tape	Width	C	12 ± 0.2	Warp ± 0.3 MAX
	Thickness	t	0.3 ± 0.05	
	Package hole depth	K ₁	2.1 ± 0.1	
Device	Package dimensions	—	—	As shown in (e)
	Inclination	θ	30° MAX.	
Total Thickness		K	2.3 ± 0.1	Total thickness including cover and carrier tapes