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T.01-13

# 1 AMP SOFT GLASS-PASSIVATED SILICON DIODES

## FEATURES:

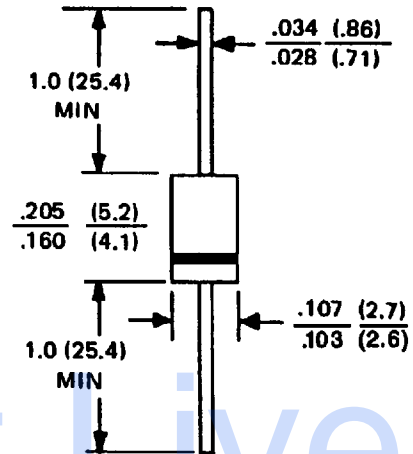
- Unique soft glass P/N junction passivation
- Void-free chip soldering
- Ultra-low current leakage
- Low forward voltage drop
- High surge current capability
- 1A at  $T_A = 75^\circ\text{C}$  with no thermal runaway
- The plastic material carries U/L recognition 94V-0

## MECHANICAL DATA

- Case: JEDEC DO-41, molded plastic
- Terminals: Plated axial leads, solderable per MIL-STD-202, method 208
- Mounting Position: Any
- Polarity: Color band denotes cathode end
- Weight: 0.35 grams

VOLTAGE RANGE  
50 to 1000 Volts  
CURRENT  
1 Amp

DO-41



Dimensions in inches & (millimeters)

## MAXIMUM RATINGS & ELECTRICAL CHARACTERISTICS

Ratings at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

MAXIMUM RATING @ $T_A = 25^\circ\text{C}$ (unless otherwise specified)	SYMBOL									UNITS
Series Number		1N4001G	1N4002G	1N4003G	1N4004G	1N4005G	1N4006G	1N4007G		
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000		Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700		
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000		
Maximum Average Forward Rectified Current 0.375 in. (9.5mm) Lead Length @ $T_A = 75^\circ\text{C}$	$I_{(AV)}$	1								Amps
Peak Forward Surge Current, 8.3ms single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	50								Amps
Maximum Instantaneous Forward Voltage at 1 Amp	$V_F$	1								Volts
Maximum DC Reverse Current @: $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A = 100^\circ\text{C}$	$I_R$	0.2 1								$\mu\text{A}$
Maximum Full Load Reverse Current Full Cycle Average 0.375 in. (9.5mm) Lead Length @ $T_L = 75^\circ\text{C}$		30								$\mu\text{A}$
Typical Junction Capacitance (Note 1)	$C_J$	10								pf
Typical Thermal Resistance $R\theta_{JA}$ (Note 2)	$R\theta_{JC}$	45								$^\circ\text{C/W}$
Operating & Storage Temperature Range	$T_J, T_{STG}$	-65 to +175								$^\circ\text{C}$

NOTES: (1) Measured at 1MHz & applied reverse voltage of 4V DC.  
(2) Thermal resistance from junction ambient 0.375 in. (9.5mm) lead length.



# 1 AMP SOFT GLASS-PASSIVATED SILICON DIODES

## RATING & CHARACTERISTICS CURVES (1N4001G-4007G)

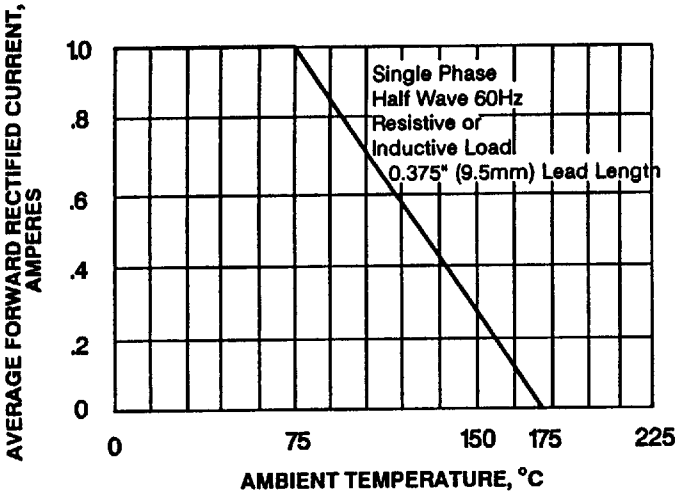


Fig. 1: Typical forward current derating curve.

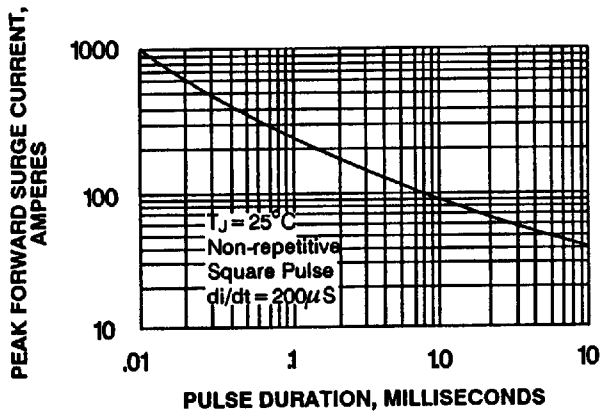


Fig. 3: Peak forward surge current.

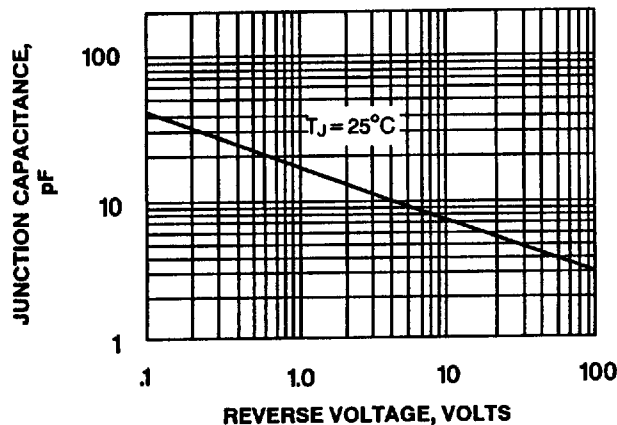


Fig. 5: Typical junction capacitance.

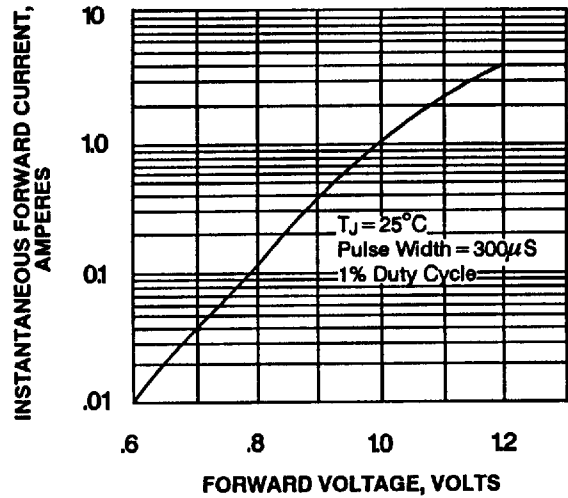


Fig. 2: Typical forward characteristics.

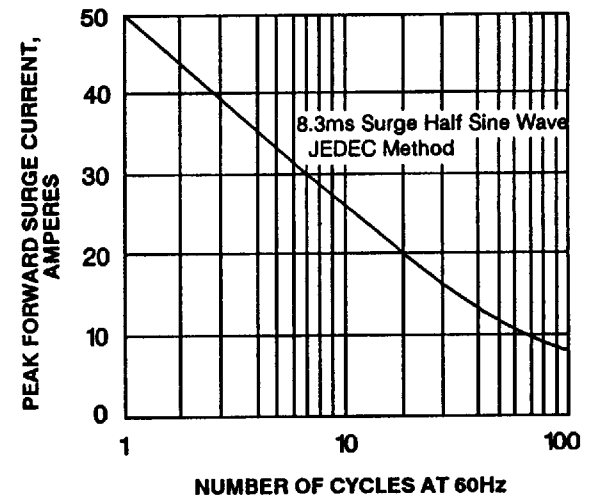


Fig. 4: Maximum non-repetitive forward surge current.

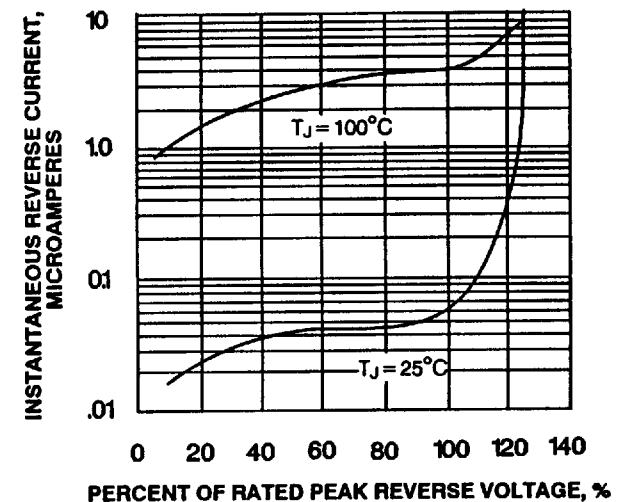
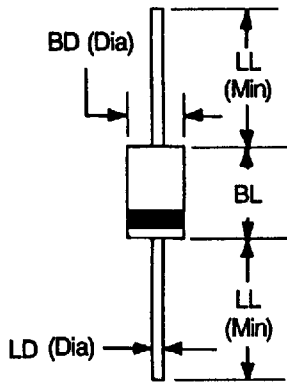


Fig. 6: Typical reverse characteristics.

# Appendix I: Package & Pin Orientation

T.91.20

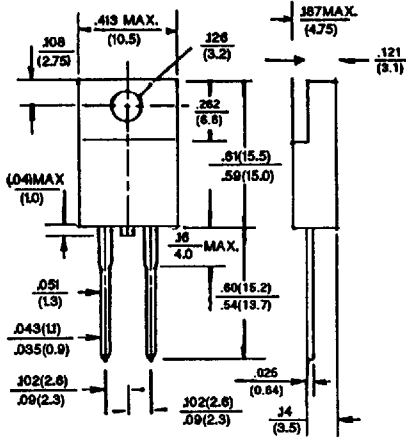
## AXIAL LEAD DIODES



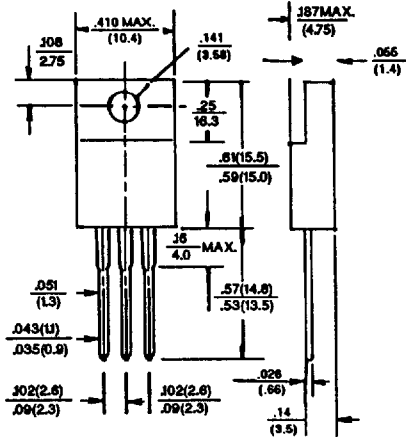
SYMBOL	DEVICE PACKAGES			
	DO-15	DT-15	DO-27	DT-27
BL	0.25 (6.35)	0.265 (6.7)	0.36 (9.15)	0.395 (10)
BD	0.132 (3.35)	0.14 (3.5)	0.205 (5.2)	0.225 (5.8)
LL	1 (25.4)	1 (25.4)	1 (25.4)	0.825 (21)
LD	0.03 (0.8)	0.03 (0.8)	0.05 (1.25)	0.056 (1.4)

SYMBOL	DO-35	DO-41	DT-41	G-6A
	BL	0.142 (3.6)	0.195 (4.95)	0.2 (5.2)
BD	0.07 (1.78)	0.105 (2.67)	0.1 (2.5)	0.275 (7)
LL	1 (25.4)	1 (25.4)	1 (25.4)	1 (25.4)
LD	0.03 (0.8)	0.03 (0.8)	0.03 (0.8)	0.05 (1.25)

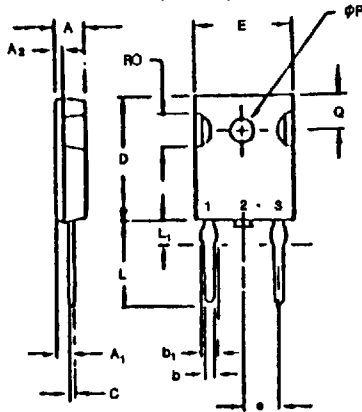
TO220AC



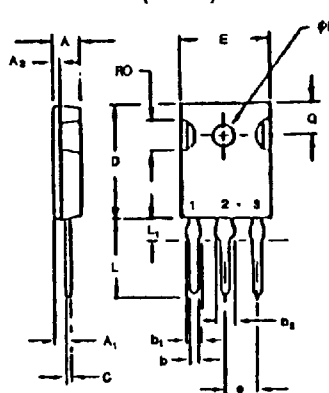
TO220AB



TO247(TO-3P)AC



TO247(TO-3P)AB

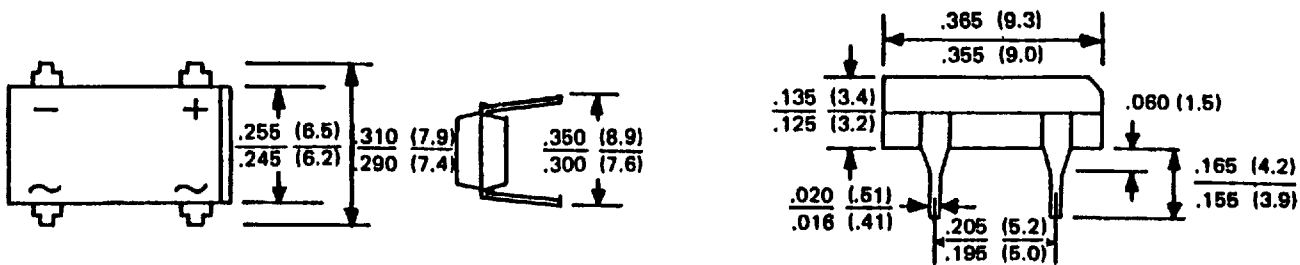


SYMBOL	DEVICE PACKAGES
	TO247AB & TO247AC
A	0.2 (5.1)
A <sub>1</sub>	0.095 (2.4)
A <sub>2</sub>	0.08 (2.03)
b	0.05 (1.27)
b <sub>1</sub>	0.09 (2.29)
b <sub>2</sub>	0.125 (3.18)
c	0.025 (0.62)
D	0.79 (20)
E	0.615 (15.62)
e	0.215 (5.46)
L	0.57 (14.48)
L <sub>1</sub>	0.16 (4.06)
ØP	0.125 (3.18)
Q	0.215 (5.46)
RO	0.2 (5.1)

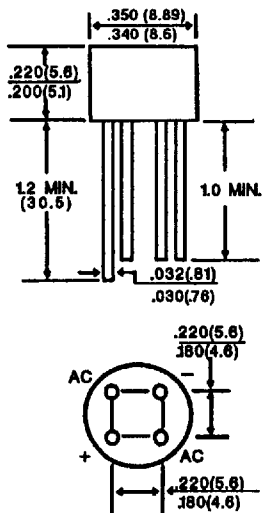
Dimensions in inches & (millimeters)

# Appendix I: Package & Pin Orientation

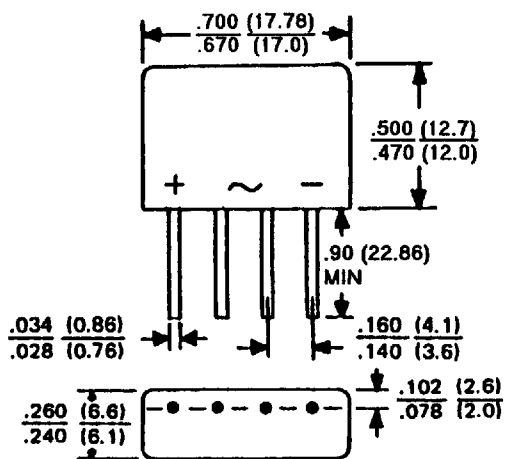
**DI**



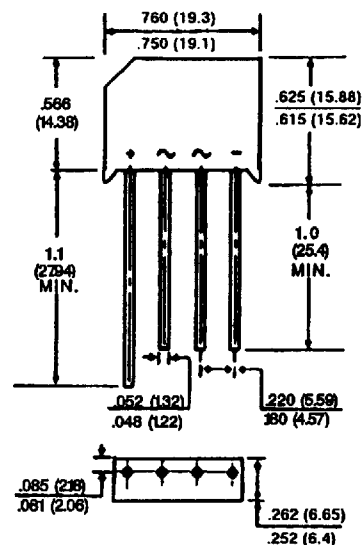
**WB**



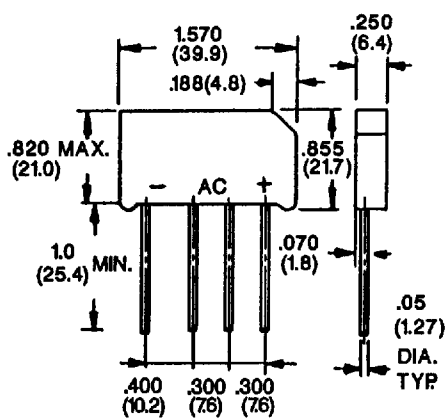
**SB2**



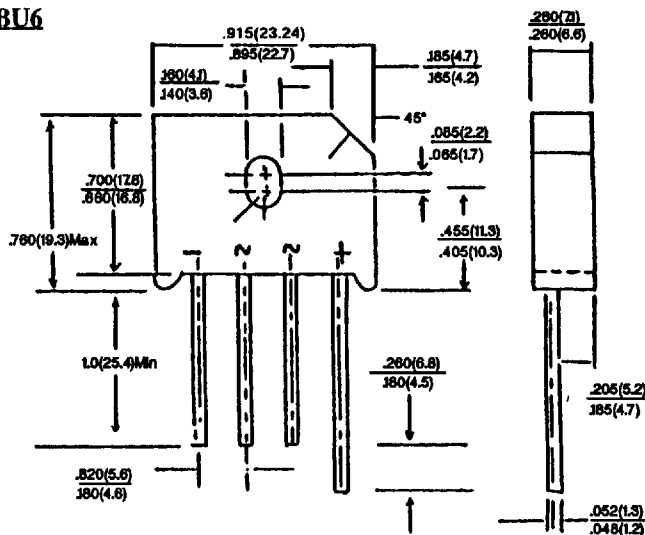
**SB4**



**SB5**



**SBU6**



# Appendix I: Package & Pin Orientation

**DB3/DB6/DB8**

**MB10**

SYMBOL	DEVICE PACKAGES			
	DB3		DB6	
	MAX.	MIN.	MAX.	MIN.
BL	0.62 (15.7)	0.58 (14.7)	0.62 (15.7)	0.58 (14.7)
BH	0.21 (5.4)	0.19 (4.9)	0.27 (6.9)	0.23 (5.8)
D1	0.445 (11.3)	0.405 (10.3)	0.445 (11.3)	0.405 (10.3)
LD	0.035 (0.9)	0.028 (0.7)	0.042 (1.1)	0.039 (1)
LL	NA	0.75 (19)	NA	0.75 (19)

SYMBOL	DB8		MB10	
	MAX.	MIN.	MAX.	MIN.
	BL	0.77 (19.6)	0.73 (18.5)	0.61 (15.5)
BH	0.3 (7.6)	0.25 (6.4)	0.21 (5.3)	0.23 (5.8)
D1	0.52 (13.2)	0.48 (12.2)	0.445 (11.3)	0.405 (10.3)
LD	0.052 (1.3)	0.048 (1.2)	0.042 (1.1)	0.039 (1)
LL	NA	0.875 (22.2)	NA	0.75 (19)

**DB25P(W)**

**DB25P**

SYMBOL	DEVICE PACKAGES			
	DB25P		DB25P(W)	
	MAX.	MIN.	MAX.	MIN.
BL	1.13 (28.17)	1.12 (28.4)	1.13 (28.7)	1.12 (28.4)
BH	0.4 (10.1)	0.39 (9.9)	0.4 (10.1)	0.39 (9.9)
D1	0.66 (16.7)	0.62 (15.7)	NA	NA
D2	0.73 (18.5)	0.69 (17.5)	0.73 (18.5)	0.69 (17.5)
D3	0.57 (14.5)	0.53 (13.5)	NA	NA
D4	NA	NA	0.47 (11.9)	0.43 (10.9)
HT	1 (25.4)	NA	NA	NA
HW	NA	NA	NA	1.2 (30.5)
LD	NA	NA	0.042 (1.1)	0.039 (1)

**DB25(W)**

**DB25**

SYMBOL	DEVICE PACKAGES			
	DB25		DB25(W)	
	MAX.	MIN.	MAX.	MIN.
BL	1.13 (28.7)	1.12 (28.4)	1.13 (28.7)	1.12 (28.4)
BH	0.44 (11.2)	0.43 (11)	0.44 (11.2)	0.43 (11)

(All other dimensions identical to those of DB35P package.)

(All other dimensions identical to those of DB35P(W) package.)

Dimensions in inches & (millimeters)

# Appendix II: Packaging Information

## 1) Tape & Reel Packaging (Axial-lead Devices)

DEVICE TYPE	COMPONENT SPACE "A" Inches (mm)	TAPE SPACE "B" Inches (mm)	REEL DIAMETER "C" Inches (mm)	QUANTITY		CARTON DIMENSIONS Inches (mm)	CARTON GROSS WEIGHT Lbs (Kgs)
				PER REEL	PER CARTON		
DO-41/DT-41	0.2 (5)	2.06 (52.4)	12.82 (326)	5,000	20,000	14 x 14 x 14 (355 x 355 x 355)	22 (10.5)
DO-15/DT-15	0.2 (5)	2.06 (52.4)	12.82 (326)	3,500	14,000		19 (8.5)
DO-27/DT-27	0.395 (10)	2.06 (52.4)	12.82 (326)	1,250	5,000		21 (9.4)
G-6A	0.395 (10)	2.06 (52.4)	12.82 (326)	600	2,400		16.5 (7.5)

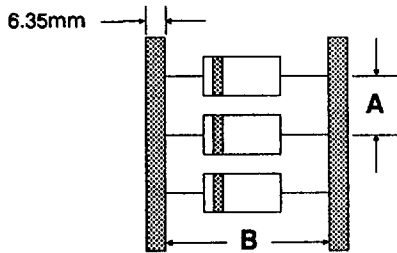


Fig. 1

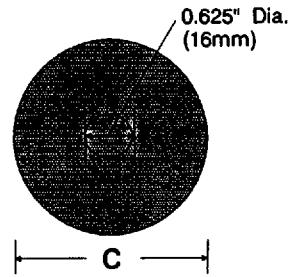


Fig. 2

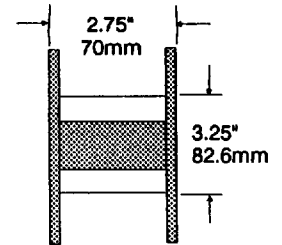


Fig. 3

## 2) Bulk Packaging

DEVICE TYPE	BOX SIZE Inches	CARTON SIZE Inches	QUANTITY		GROSS WEIGHT, Lbs (Kgs)	
			PER BOX	PER CARTON	PER BOX	PER CARTON

### AXIAL-LEAD DIODES

DO-41 / DT-41	7.88 x 3.31 x 0.94	17.25 x 8.75 x 10	1,000	50,000	0.825 (0.37)	43 (19.5)
DO-15 / DT-15	7.88 x 3.31 x 1.25	17.25 x 8.75 x 10	1,000	40,000	1.03 (0.46)	43 (19.5)
DO-27 / DT-27	12 x 3 x 1.56	15.5 x 12.25 x 11.25	500	15,000	1.438 (0.65)	44 (20)
G-6 A	12 x 3 x 1.56	15.5 x 12.25 x 11.25	400	12,000	1.5 (0.68)	50.6 (23)

### BRIDGE RECTIFIERS

WB	12 x 4.25 x 3.75	22.5 x 13 x 12.5	1,000	15,000	2.87 (1.3)	46.6 (21.2)
SB2	8.38 x 6.44 x 2.06	17.5 x 9 x 9.5	400	4,000	3.12 (1.4)	33 (15)
DB3	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9	200	2,000	1.37 (0.6)	15.5 (7)
SB4	8.75 x 8.75 x 2	17.5 x 9 x 10.5	400	4,000	5.12 (2.35)	53 (24)
SB5	13.5 x 6.69 x 1.5		400		22.7 (10.32)	
SBU6	11.12 x 7.75 x 1.75		400		7.48 (3.4)	
DB6	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9	200	2,000	1.9 (0.87)	20.7 (9.4)
DB8	8.75 x 8.75 x 1.56	17.5 x 9 x 9.5	200	2,000	2.37 (1.08)	25.5 (11.6)
DB25/T	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9.75	50	500	3.75 (1.7)	39 (17.8)
DB25/W	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9.75	50	500	3.5 (1.59)	36.5 (16.6)
DB25P/T	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9.75	50	500	2.46 (1.12)	26.1 (11.9)
DB25P/W	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9.75	50	500	2.2 (1.01)	23.5 (10.6)

## 3) Anti-static Plastic Tube Packaging

			PER TUBE	PER CARTON	PER TUBE	PER CARTON
DI	19.2 LONG	22.5 x 13 x 12.5	50	20,000	0.1 (0.045)	46.2 (21)
TO-220 AB/AC	20.5 LONG		50		0.2 (0.09)	
TO-3P (TO-247)	16 LONG		25		0.375 (0.17)	