

High Voltage Diodes

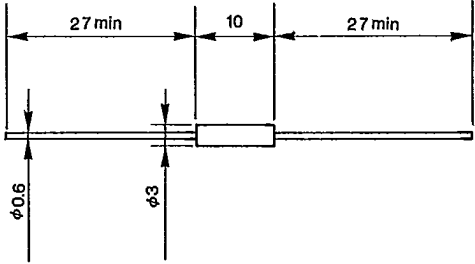
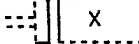
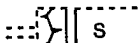
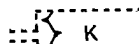
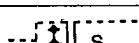
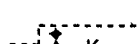
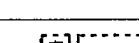
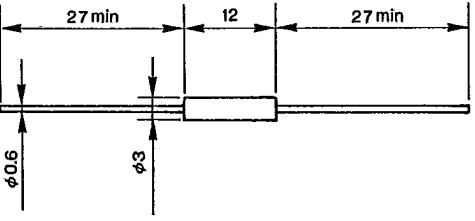
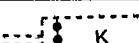
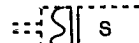
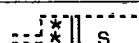
V_{RM}: 2~24kVI_o: 2mA/350mA

SHV/HVR

Rating/ Characteristics	Absolute Maximum Ratings						Electrical Characteristics (Ta=25°C)						Others				
	V _{RSM} (kV)	V _{RM} (kV)	I _o (mA)	I _{FSM} (A)	T _c (°C)	T _{stg} (°C)	V _F (V)		I _R (μA)	I _{R(H)} (μA)	t _{rr} (μs)		Outline Drawing	Weight(g)	Taping	Application	
Type No.				50Hz Half Sine Wave Single Pulse			max	I _F (mA)	V _R =V _{RM} max	V _R =V _{RM} Ta=100°Cmax		I _F /I _R (mA)	Ta=100°C				
SHV-02	2.2	2	2 [TV High Voltage CLoad]	0.3	100	-40~ +120	10	1	3	0.18	10/10	—	25	0.15	Available	For TV High Voltage	
SHV-03	—	3		0.5									16	26			0.16
SHV-06	7	6												28			0.2
SHV-08	9	8												29			0.32
SHV-10	12	10												30			
SHV-12	14	12												31			
SHV-14	17	14												32			
SHV-16	19	16												33			0.2
SHV-20	24	20												34			
SHV-24	27	24												35			
SHV-06NK	7	6												36		0.2	
SHV-08NK	9	8												37			
SHV-10K	12	10												38			
SHV-12K	14	12												39			
SHV-06UNK	7	6												40		0.2	
SHV-08UNK	9	8												41			
SHV-10UK	12	10												42			
SHV-12UK	14	12												43			
SHV-16UK	19	16												44		0.3	
SHV-08X	9	8	45														
HVR-1X-40B	—	9	350	20	60(Ta)	-40~+130	9	350	10	V _B =9.5KVmin, 15KVmax	—	29	0.32	3.67	For MWO		

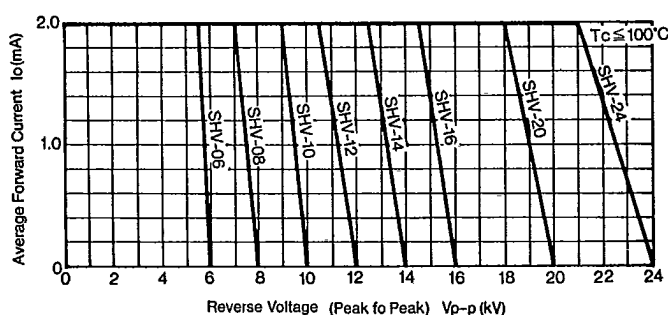
Type No.	Outline Drawing	Marking	
		Marking Pattern	Marking Color
SHV-02	Outline Drawing ②5 		White
			Red
SHV-03	Outline Drawing ②6 		White
SHV-06NK	Outline Drawing ②7 		White
SHV-06UNK			Red
SHV-08NK			White
SHV-08UNK			Red
SHV-06	Outline Drawing ②8 		White
SHV-08			

For TV/Microwave Oven

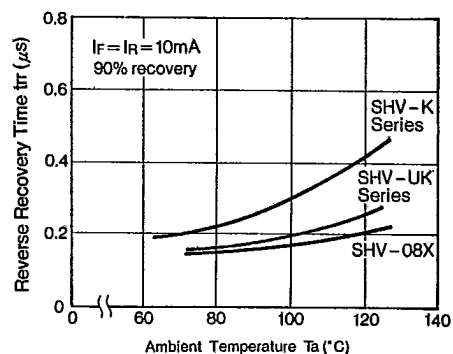
Type No.	Outline Drawing	Marking	
		Marking Pattern	Marking Color
SHV-08X	Outline Drawing ②⑨ 	 X	Red
SHV-10		 S	White
SHV-10K		 K	
SHV-10UK		 S	Red
SHV-12		 S	White
SHV-12K		 K	
SHV-12UK		 S	Red
SHV-14	Outline Drawing ③⑩ 	 S	White
SHV-16UK		 K	Red
SHV-20		 S	White
SHV-24		 S	

SHV Series

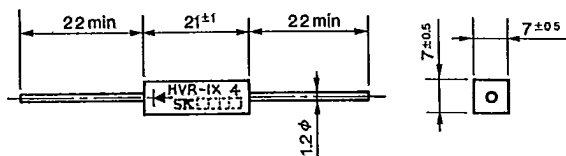
Io - Vp-p Characteristics



trr - ta Characteristics



Outline Drawing ③①



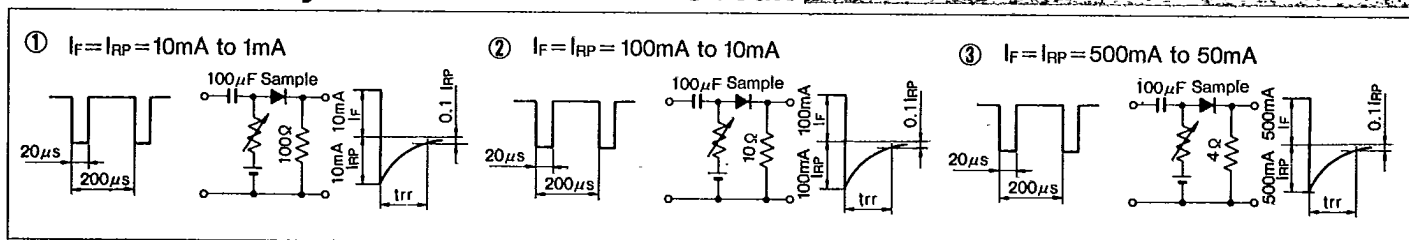
②⑤~③① Plastic Molded, Flammability: UL94V-0 or Equivalent

Symbols/trr Measurement Circuit

Symbols

V_{RSM}	Peak Reverse Surge Voltage	I_{RSM}	Peak Reverse Surge Current	T_{stg}	Storage Temperature
V_{RM}	Peak Reverse Voltage	I_R	Reverse Current	t_{rr}	Reverse Recovery Time
V_{P-P}	Reverse Voltage (Peak to Peak)	I_{RP}	Peak Reverse Current	C_t	Total Capacitance Between Terminals
V_R	Reverse Voltage	$I_{R(H)}$	Reverse Current (High Temperature)	$R_{th(j-c)}$	Thermal Resistance, Junction to Case
V_F	Forward Voltage	I_Z	Avalanche Current	r_z	Temperature Coefficient of Breakdown Voltage
V_B	Breakdown Voltage	I_{ZSM}	Allowable Avalanche Current	R_z	Equivalent Resistance of Breakdown Region
I_o	Average Rectified Forward Current	T_a	Ambient Temperature	$P_{F(AV)}$	Average Forward Power Dissipation
I_F	Forward Current	T_j	Junction Temperature	I_t^2	I_t^2 limiting Value
$I_{F(AV)}$	Average Forward Current	T_{opr}	Operating Ambient Temperature		
I_{FSM}	Peak Forward Surge Current	T_c	Case Temperature		

Reverse Recovery Time Measurement Circuit



Taping Specifications

Excluding High Voltage Diodes

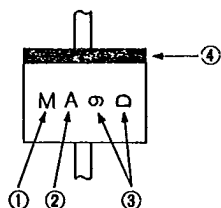
Designation	Dimension (in mm)	Packaging Dimension and Marking	Quantity
V Add Suffix [V] to Type No.	Tape Carrier Method (1) Right side of taping direction is cathode. (2) Place electrode side down when casing. (3) Provide leader tape of 150~200mm at beginning of tape. (4) Provide space of more than 10 pitches each for beginning and end of tape.	Reel Marking of Type No., Lot No. and Quantity 	1,800 pcs per reel
V Add Suffix [V] to type No.	Axial Taping 	Reel Markings of Type No. Lot No. and Quantity Core Flange 	5,000 pcs per reel (2.7 φ body) 3,000 pcs per reel (4.0 φ body)

Taping Specifications

Designation	Dimension (in mm)	Packaging Dimension and Marking	Quantity
V1 Add Suffix [V1] to Type No.	Axial Taping 	Ammunition Pack 	2,000 pcs per box (2.7 ϕ body) 1,000 pcs per box (4.0 ϕ body)
VO Add Suffix [VO] to Type No.	Axial Taping 	Ammunition Pack 	2,000 pcs per box (2.7 ϕ body) (2.4 ϕ body)
V3 Add Suffix [V3] to Type No.	Axial Taping 	Reel 	1,500 pcs per reel (5.2 ϕ body)
V4 Add Suffix [V4] to Type No.	Axial Taping 	Ammunition Pack 	1,000 pcs per box (5.2 ϕ body)
W Add Suffix [W] to Type No.	Radial Taping 	Ammunition Pack 	4,000 pcs per box (2.7 ϕ body) (0.6 ϕ lead)
WS Add Suffix [WS] to Type No.	Radial Taping (Applicable to AO Series) 	Ammunition Pack 	2,500 pcs per box (2.4 ϕ body)
WK Add Suffix [WK] to Type No.	Radial Taping (Applicable to AO Series) 		

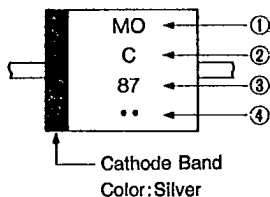
Marking Guide

1 Small TMD



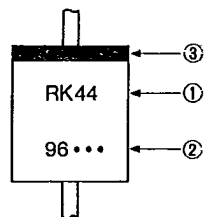
- ① Type Designation (in abbreviation)
AM01 is abbreviated as M.
- ② Class Designation
Z: 200V, No Letter: 400V, A: 600V
- ③ A: Year (Last Number of AD Year)
B: Month (Jan. to Sept. are represented by numbers 1 to 9 respectively, and Oct., Nov., and Dec. are abbreviated as O, N and D respectively)
- ④ Cathode Band: Successive Band, however AU02 Type is Non-Successive Band.

2 E/EO Type TMD



- ① Type Designation (in abbreviation)
EM01 is abbreviated as MO, EM2 is abbreviated as M2.
- ② Class Designation
Z: 200V, No Letter: 400V, A: 600V
B: 800 V, C: 1000V, F: 1500V
However, EU02A to be marked 2A, and EU2YX to be marked Y.
- ③ Abbreviations Representing Production Period
A: Year (Last Number of AD Year)
B: Month (1~9, O, N, D)
- ④ Production Period Divided in 3 ten day terms
• : 1st 10days •• : 2nd 10days ••• : 3rd 10days

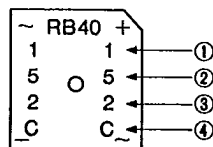
3 R Type TMD



- ① Type Designation: Mark in 2 sets
- ② Production Period: Mark in 4 sets
A: Year (Last Number of AD Year)
B: Month (1~9, O, N, D)
- ③ Production Period Divided in 3 ten day terms
• : 1st 10days •• : 2nd 10days ••• : 3rd 10days
- ④ Cathode Band Color: Silver: For Power Supply
Yellow: For Middle Speed
Red : For High Speed and Ultra-High Speed

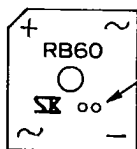
4 RB40/60

(RB40 Series)



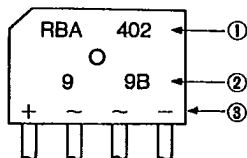
- ① Peak Reverse Voltage Designation
1, 2, 4, 6, C
Production Period
- ② Year (Last Number of AD Year)
- ③ Month (1~9, O, N, D)
- ④ Divided in 3 ten day terms
A: 1st 10days, B: 2nd 10days
C: 3rd 10days
Color Designation: Silver

(RB60 Series)



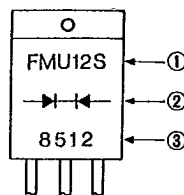
Dot Designation RB601 Violet
RB602 No Color
RB604 Blue
RB606 White

5 RBV/RBA



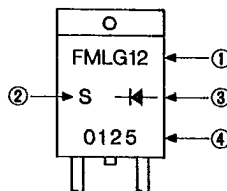
- ① Type Designation
- ② Lot Number
1st : Year (Last Number of AD Year)
2nd: Month (1~9, O, N, D)
3rd : Divided 1~3 ten day Terms
A: 1st 10 days B: 2nd 10 days
C: 3rd 10 days
- ③ In-Put Designation

6 TO220 Type (FM or CT Type)



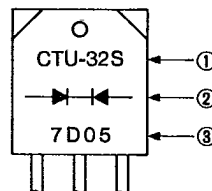
- ① Type Designation
Show FMU-12S as FMU12S.
- ② Polarity: Rectifier Symbols
- ③ Lot Number (Laser Marking)
1st : Year (Last Number of AD Year)
2nd : Month (0~9, O, N, D)
3rd, 4th: Day

7 TO220 Type (FM or CT Type, single chip)



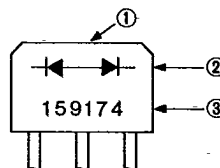
- ① Type Designation: Omit Last Letter
Show FML-G12S as FMLG12.
- ② Last Letter of Type Designation
- ③ Polarity: Rectifier Symbols
- ④ Lot Number (Laser Marking)
1st : Year (Last Number of AD Year)
2nd : Month (0~9, O, N, D)
3rd, 4th: Day

8 TO3P Type (FM or CT Type)



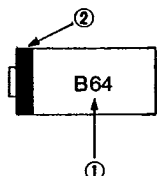
- ① Type shown in full designation
However, CTB-34/34S/34M are marked as CTB-34, CTU-G3DR is marked as CTUG3DR.
- ② Polarity: Rectifier Symbols
- ③ Lot Number:
1) M, U, G and L Types
First Number : Last Digit of AD Year
Second Number : Month
Third and Fourth Numbers: Day
Fifth Number : None
2) For types CTB-34/34S/34M, the fifth letter shows type designation. If no fifth number, the type is CTB-33 or CTB-34.
3) Marking Color: Silver

9 MI-10/15 Type



- ① MI-10/15 is die-stamped on the top of the case.
- ② Rectifier Symbols
- ③ Lot Number:
First Number : Peak Reverse Voltage:
(Letter) 0=50V, 1=100V, 2=200V,
4=400V, 6=600V, C=1000V
Second Number : Last Digit of AD Year
Third Number : Month
Fourth and Fifth Numbers: Day
Sixth Number : Production number and
U: Voltage Doubler Type

10 SFP Type



- ① Type Designation:
SFPB-64 is abbreviated at B64.
- ② Cathode Band