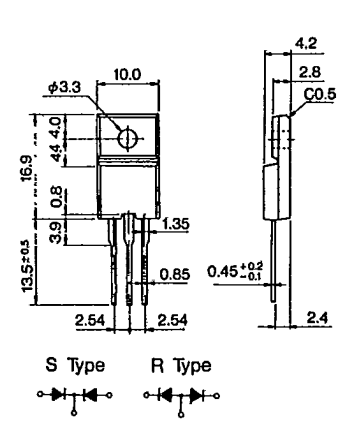
Ultra Fast Recovery Diodes VRM:100~600V Io:5.0~20A

FMG/FML

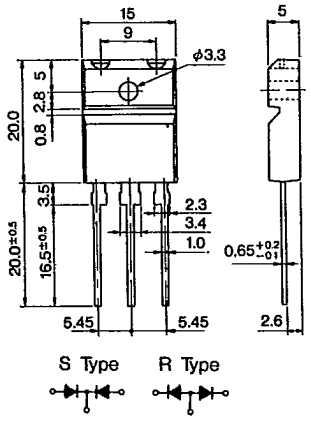
Rating/Characteristics	Absolute Maximum Ratings						Electrical Characteristics (Ta=25°C)					Others			
	VRSM (V)	VRM (V)	Io (A)	IFSM (A)	Tj (°C)	Tstg (°C)	VF (V)		IR (mA)	IR(H) (mA)	trr (μs)		Outline Drawing	Weight(g)	Taping	Note
Type No.	per chip		With Fin	50Hz Sine Half Wave Single Pulse 10ms			Max. per chip	IF (A)	VR=VRM max (per chip)	VR=VRM, Tj=150°C max (per chip)		IF/IRP (mA)				
FMG-11S, R	100	100	5.0	35	−40~+150		1.3	2.5	0.5	1.5	0.1	100/100	⑫	2.1	—	For High Frequency Rectification
FMG-12S, R	200	200					1.8									
FMG-13S, R	300	300														
FMG-14S, R	400	400					2.0									
FMG-21S, R	100	100	10	65			1.3	5.0		2.5			⑫	2.1		
FMG-22S, R	200	200					1.8									
FMG-23S, R	300	300														
FMG-24S, R	400	400	8.0				2.0									
FMG-26S, R	600	600	6.0	50			2.2	3.0		3.0						
FMG-31S, R	100	100	20	150			1.3	10	1.0	5.0			⑬	5.5		
FMG-32S, R	200	200					1.8									
FMG-33S, R	300	300														
FMG-34S, R	400	400	16	100			2.0									
FMG-36S, R	600	600	15	80			2.2	7.5								
FMG-G26S	600	600	4.0	50			2.5	4.0	0.5	3.0			⑭	2.1		
FMG-G36S	600	600	8.0	80				8.0				500/500	⑮	5.5		
FML-11S	100	100	5.0	35			0.98	2.5	0.15	0.5	0.04	100/100	⑫	2.1		
FML-12S	200	200														
FML-13S	300	300		40			1.3		0.05	0.25	0.05					
FML-14S	400	400								0.1						
FML-21S	100	100	10	65			0.98	5.0	0.25	1.0	0.04					
FML-22S	200	200														
FML-23S	300	300		70			1.3		0.1	0.5	0.05					
FML-24S	400	400								0.2						
FML-31S	100	100	20	150			0.98	10	0.6	2.0	0.04		⑬	5.5		
FML-32S	200	200														
FML-33S	300	300		100			1.3		0.2	1.0	0.05	500/500				
FML-34S	400	400								0.4						
FML-G12S	200	200	5.0	65			0.98	5.0	0.25	1.0	0.04	100/100	⑭	2.1		
FML-G13S	300	300		70			1.3		0.1	0.2	0.05					
FML-G14S	400	400														
FML-G16S	600	600		50			1.5			0.5		500/500				
FML-G22S	200	200	10	150			0.98	10	0.5	2.0	0.04	100/100	⑭			

Therminal Resistance Rth(j-c) max : 4.2°C/W (FMG-G26S)
2.1°C/W (FMG-G36S)

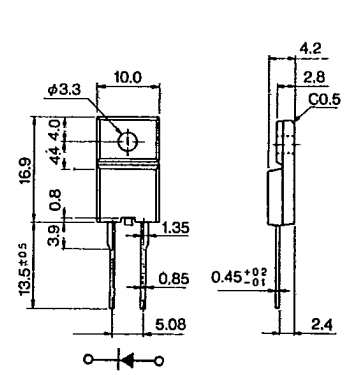
Outline Drawing ⑫



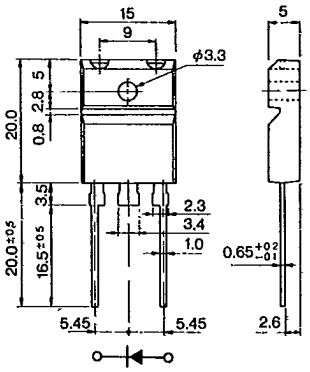
Outline Drawing ⑬



Outline Drawing ⑭

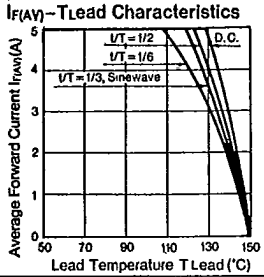


Outline Drawing ⑮

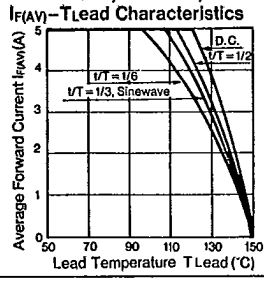


⑫~⑮ Plastic Molded, Flammability : UL94V-0 or Equivalent

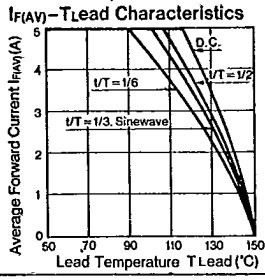
FMG-11SR
$I_{F(AV)}$–TLead Characteristics



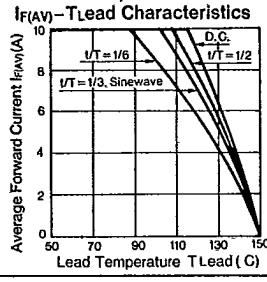
FMG-12S, R/13S, R
$I_{F(AV)}$–TLead Characteristics



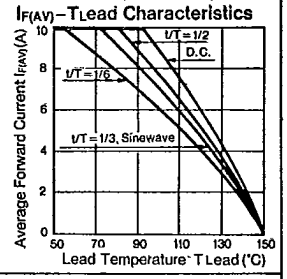
FMG-14S, R
$I_{F(AV)}$–TLead Characteristics



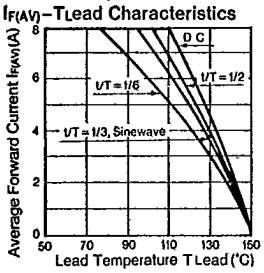
FMG-21S, R
$I_{F(AV)}$–TLead Characteristics



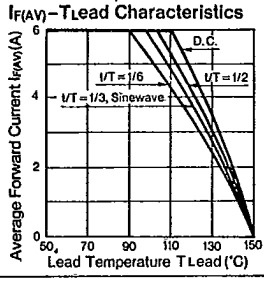
FMG-22S, R/23S, R
$I_{F(AV)}$–TLead Characteristics



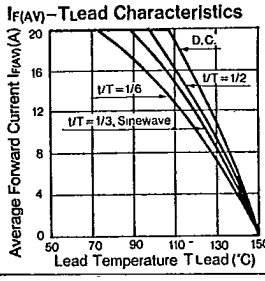
FMG-24S, R
$I_{F(AV)}$–TLead Characteristics



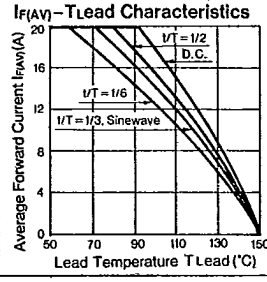
FMG-26S, R
$I_{F(AV)}$–TLead Characteristics



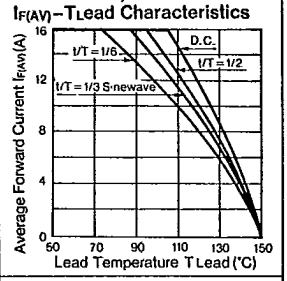
FMG-31S, R
$I_{F(AV)}$–TLead Characteristics



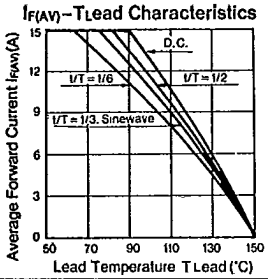
FMG-32S, R/33S, R
$I_{F(AV)}$–TLead Characteristics



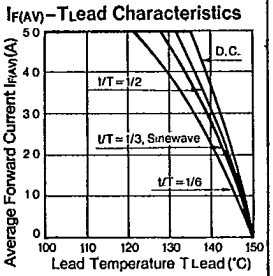
FMG-34S, R
$I_{F(AV)}$–TLead Characteristics



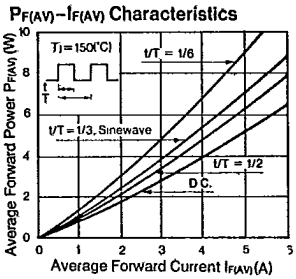
FMG-36S.R
$I_{F(AV)}$–TLead Characteristics



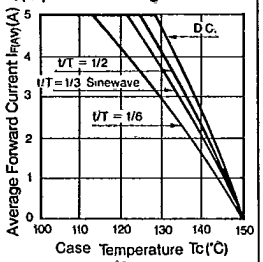
FML-11S/12S
$I_{F(AV)}$–TLead Characteristics



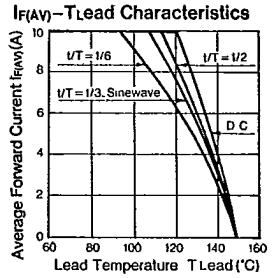
FML-13S
$P_{F(AV)}$–$I_{F(AV)}$ Characteristics



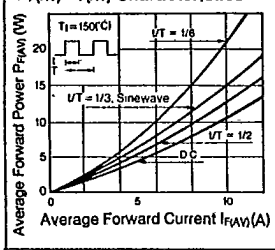
$I_{F(AV)}$–Tc Deratings



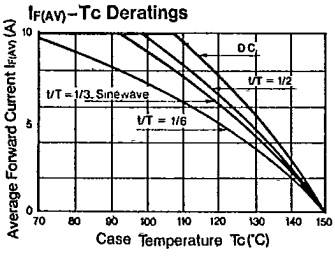
FML-21S/22S
$I_{F(AV)}$–TLead Characteristics



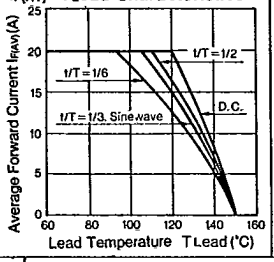
FML-23S
$P_{F(AV)}$–$I_{F(AV)}$ Characteristics



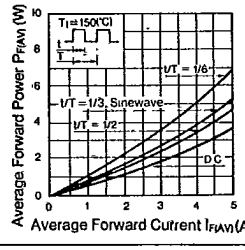
$I_{F(AV)}$–Tc Deratings



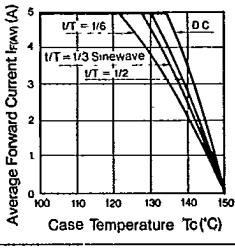
FML-31S/32S
$I_{F(AV)}$–TLead Characteristics



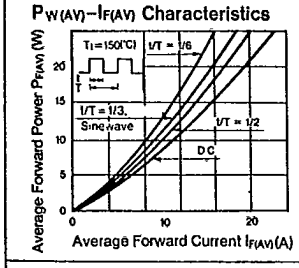
FML-G12S
$P_{F(AV)}$–$I_{F(AV)}$ Characteristics



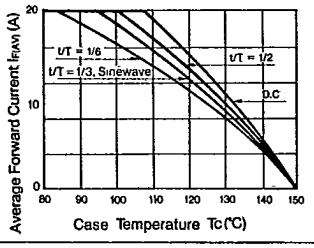
$I_{F(AV)}$–Tc Deratings



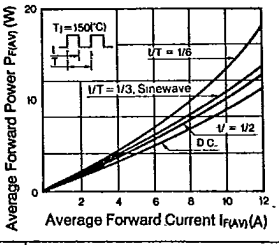
FML-33S
$P_{W(AV)}$–$I_{F(AV)}$ Characteristics



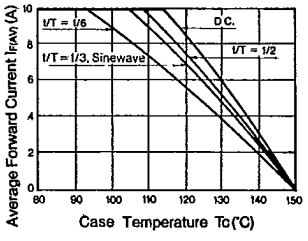
$I_{F(AV)}$–Tc Deratings



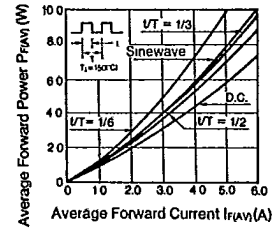
FML-G22S
$P_{F(AV)}$–$I_{F(AV)}$ Characteristics



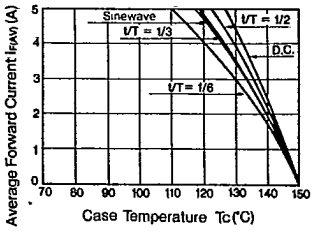
$I_{F(AV)}$–Tc Deratings



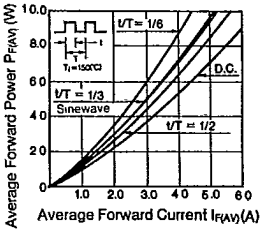
FML-G13S/G14S
$P_{F(AV)}$–$I_{F(AV)}$ Characteristics



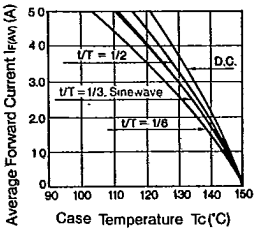
$I_{F(AV)}$–Tc Deratings



FML-G16S
$P_{F(AV)}$–$I_{F(AV)}$ Characteristics



$I_{F(AV)}$–Tc Deratings



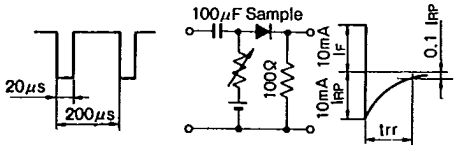
Symbols/trr Measurement Circuit

Symbols

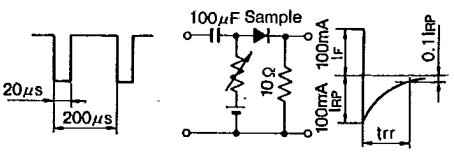
V_{RSM}	Peak Reverse Surge Voltage	I_{RSM}	Peak Reverse Surge Current	Tstg	Storage Temperature
V_{RM}	Peak Reverse Voltage	I_R	Reverse Current	trr	Reverse Recovery Time
V_{P-P}	Reverse Voltage (Peak to Peak)	I_{RP}	Peak Reverse Current	Ct	Total Capacitance Between Terminals
V_R	Reverse Voltage	$I_{R(H)}$	Reverse Current (High Temperature)	Rth(j-c)	Thermal Resistance, Junction to Case
V_F	Forward Voltage	Iz	Avalanche Current	rz	Temperature Coefficient of Breakdown Voltage
V_B	Breakdown Voltage	I_{ZSM}	Allowable Avalanche Current	Rz	Equivalent Resistance of Breakdown Region
I_O	Average Rectified Forward Current	Ta	Ambient Temperature	$P_{F(AV)}$	Average Forward Power Dissipation
I_F	Forward Current	Tj	Junction Temperature	I^2t	I^2t limiting Value
$I_{F(AV)}$	Average Forward Current	Topr	Operating Ambient Temperature		
I_{FSM}	Peak Forward Surge Current	Tc	Case Temperature		

Reverse Recovery Time Measurement Circuit

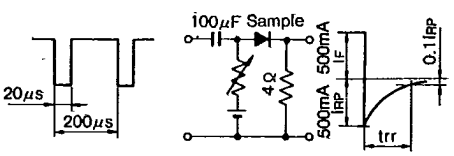
① $I_F = I_{RP} = 10mA$ to $1mA$



② $I_F = I_{RP} = 100mA$ to $10mA$

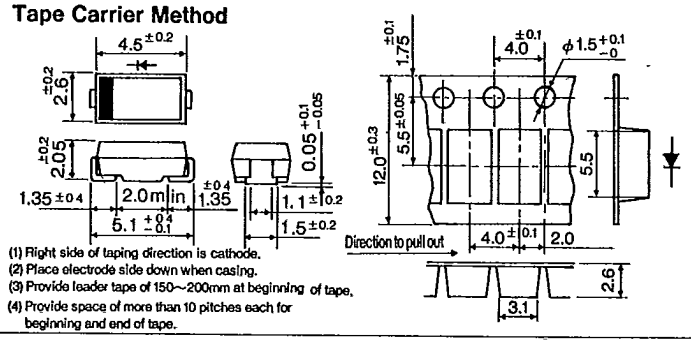
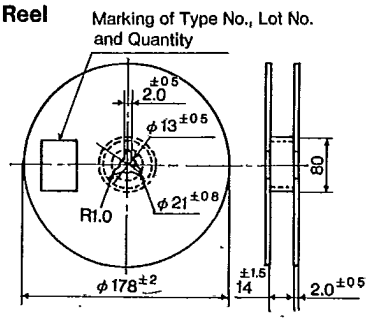
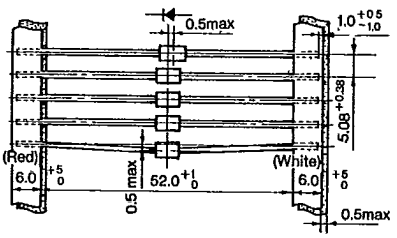
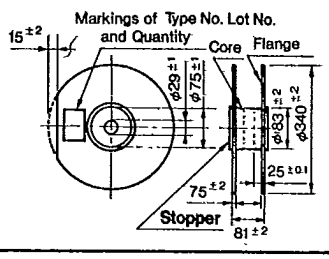


③ $I_F = I_{RP} = 500mA$ to $50mA$

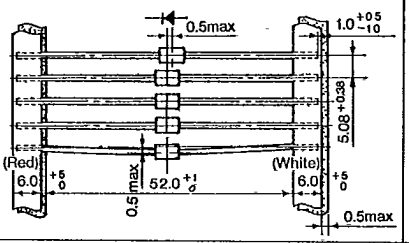
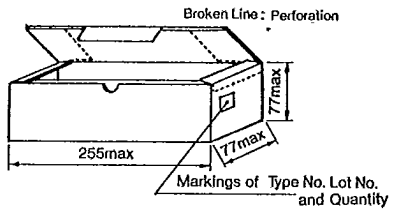
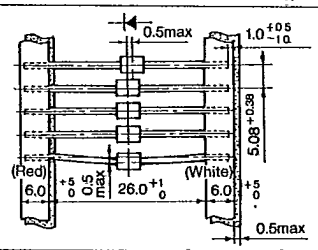
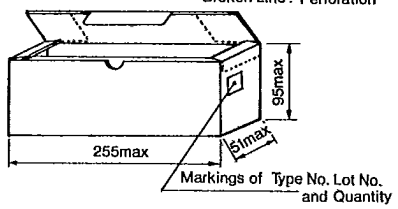
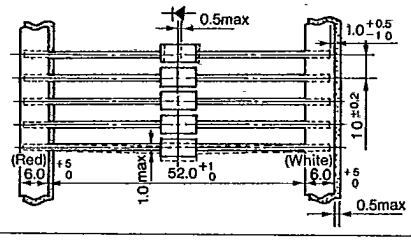
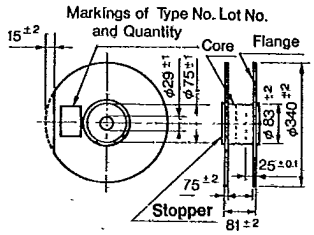
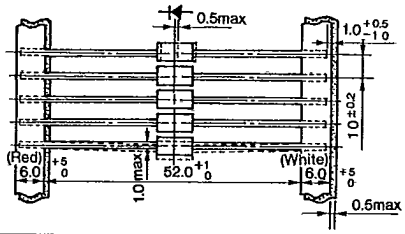
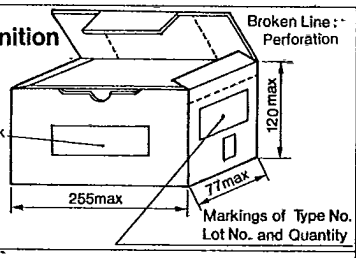
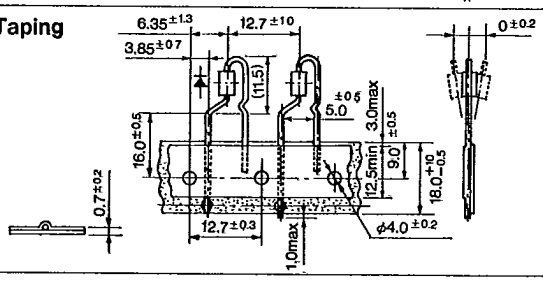
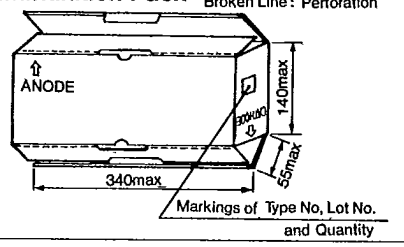
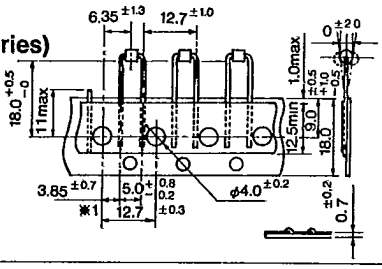
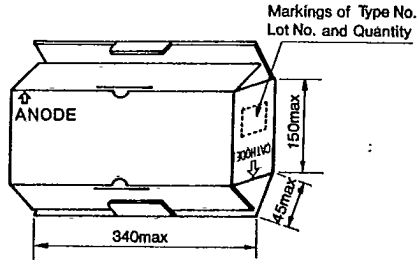
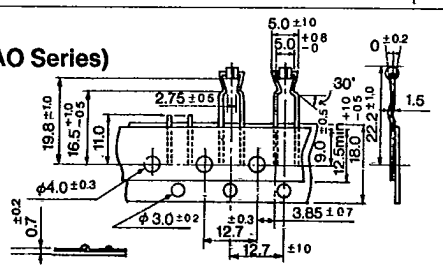


Taping Specifications

Excluding High Voltage Diodes

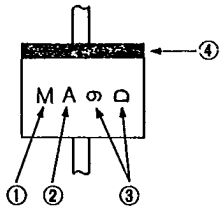
Designation	Dimension (in mm)	Packaging Dimension and Marking	Quantity
V Add Suffix [V] to Type No.	**Tape Carrier Method**  (1) Right side of taping direction is cathode. (2) Place electrode side down when casing. (3) Provide leader tape of 150~200mm at beginning of tape. (4) Provide space of more than 10 pitches each for beginning and end of tape.	**Reel** 	1,800 pcs per reel
V Add Suffix [V] to type No.	**Axial Taping** 	**Reel** 	5,000 pcs per reel (2.7φ body) 3,000 pcs per reel (4.0φ 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 (2.7φ body) 1,000 pcs per box (4.0φ body)
VO Add Suffix [VO] to Type No.	Axial Taping 	Ammunition Pack 	2,000 pcs per box (2.7φ body) (2.4φ body)
V3 Add Suffix [V3] to Type No.	Axial Taping 	Reel 	1,500 pcs per reel (5.2φ body)
V4 Add Suffix [V4] to Type No.	Axial Taping 	Ammunition Pack 	1,000 pcs per box (5.2φ body)
W Add Suffix [W] to Type No.	Radial Taping 	Ammunition Pack 	4,000 pcs per box (2.7φ body) (0.6φ lead)
WS Add Suffix [WS] to Type No.	Radial Taping (Applicable to AO Series) 	Ammunition Pack 	2,500 pcs per box (2.4φ body)
WK Add Suffix [WK] to Type No.	Radial Taping (Applicable to AO Series) 		2,500 pcs per box (2.4φ body)

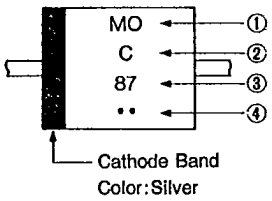
Marking Guide

1 Small TMD



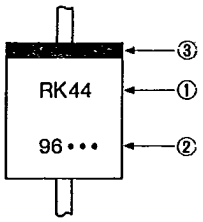
①Type Designation (in abbreviation)
AM01 is abbreviated as M.
②Class Designation
Z:200V, No Letter: 400V, A: 600V
③A:Year (Last Number of AD Year)
B:Month (Jan. to Sept. are represented by numbers 1 to 9 respectively, and Oct., Nov., and Dec. are abbreviated as O, N and D respectively)
④Cathode Band: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

2 E/EO Type TMD



①Type Designation (in abbreviation)
EM01 is abbreviated as MO, EM2 is abbreviated as M2.
②Class 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.
③Abbreviations Representing Production Period
A:Year (Last Number of AD Year)
B:Month (1~9, 0, N, D)
④Production Period Divided in 3 ten day terms
• : 1st 10days •• : 2nd 10days ••• : 3rd 10days

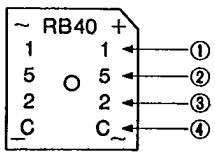
3 R Type TMD



①Type Designation:Mark in 2 sets
②Production Period:Mark in 4 sets
A:Year (Last Number of AD Year)
B:Month (1~9, 0, N, D)
③Production Period Divided in 3 ten day terms
• : 1st 10days •• : 2nd 10days ••• : 3rd 10days
④Cathode Band Color:Silver:For Power Supply
Yellow: For Middle Speed
Red : For High Speed and Ultra-High Speed

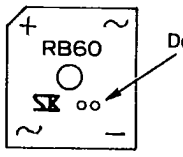
4 RB40/60

(RB40 Series)



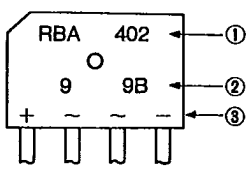
①Peak Reverse Voltage Designation
1, 2, 4, 6, C
Production Period
②Year (Last Number of AD Year)
③Month (1~9, 0, N, D)
④Divided in 3 ten day terms
A: 1st 10days, B: 2nd 10days
C: 3rd 10days
Color Designation: Silver

(RB60 Series)



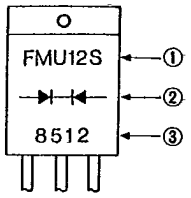
Dot Designation RB601 Violet
RB602 No Color
RB604 Blue
RB606 White

5 RBV/RBA



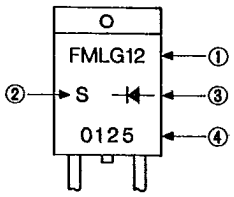
①Type Designation
②Lot Number
1st : Year (Last Number of AD Year)
2nd: Month (1~9, 0, N, D)
3rd : Divided 1~3 ten day Terms
A: 1st 10 days B: 2nd 10 days
C: 3rd 10 days
③In-Put Designation

6 TO220 Type (FM or CT Type)



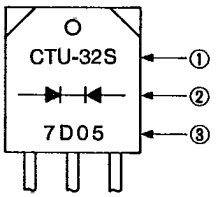
①Type Designation
Show FMU-12S as FMU12S.
②Polarity:Rectifier Symbols
③Lot Number (Laser Marking)
1st : Year (Last Number of AD Year)
2nd : Month (0~9, 0, N, D)
3rd, 4th: Day

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



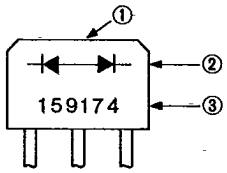
①Type Designation:Omit Last Letter
Show FML-G12S as FMLG12.
②Last Letter of Type Designation
③Polarity:Recitifier Symbols
④Lot Number (Laser Marking)
1st : Year (Last Number of AD Year)
2nd : Month (0~9, 0, N, D)
3rd, 4th: Day

8 TO3P Type (FM or CT Type)



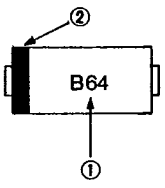
①Type shown in full designation
However, CTB-34/34S/34M are marked as CTB-34, CTU-G3DR is marked as CTUG3DR.
②Polarity:Rectifier Symbols
③Lot Number:
1) M, U, G and L Types
First Number : Last Digit of AD Year
Second Number : Month
Third and Fourth Numbers:Day
Fifth Number : None
2) For types CTB-34/34S/34M, 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



①MI-10/15 is die-stamped on the top of the case.
②Rectifier Symbols
③Lot Number:
First Number (Letter) :Peak Reverse Voltage:
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



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