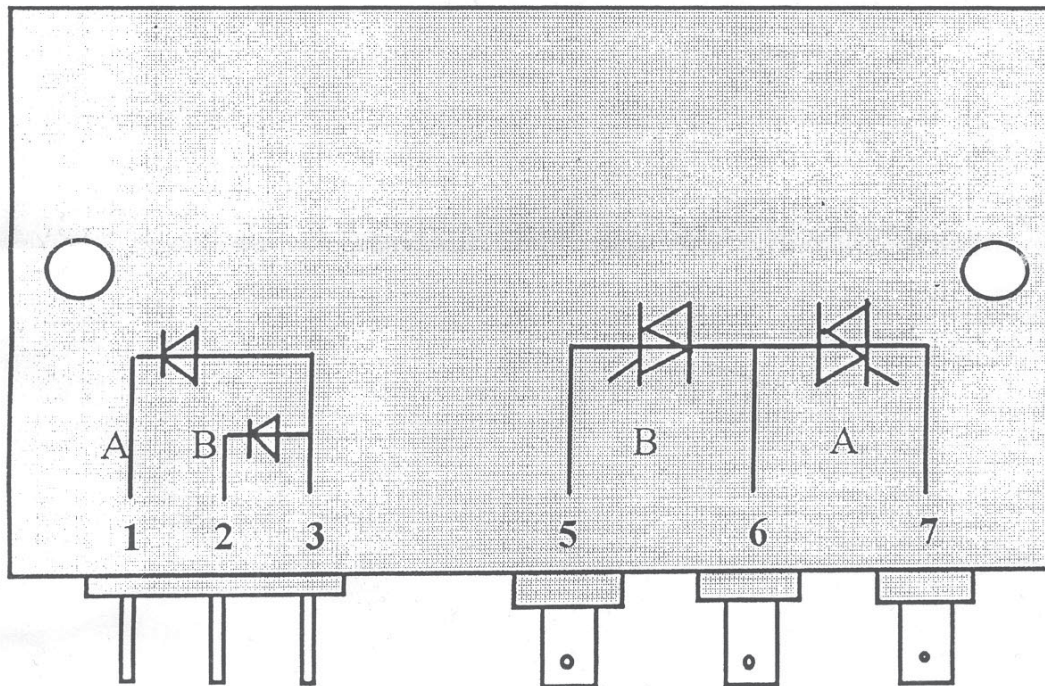


Dual solid-state relay

17844-RL

12amp @ 240 volts AC
5 Volt input control

MITSUBISHI SF12D-8329



P-710 DWG TRANSLATION SHEET		SHEET 2 OF 9
PARTNAME	HIC - SSR (100V/115V)	REV. K 1

NOTE

1. PURCHASED FROM ; REFER TO SHT. 9
MANUFACTURER'S PART NO. ; SF12D-8329
2. IN CASE OF CONFLICT BETWEEN SPECIFICATIONS PER
MANUFACTURER'S PART NO. AND SPECIFICATIONS PER THIS
DRAWING, THE DRAWING SHALL TAKE PRECEDENCE. NO CHANGE
SHALL BE MADE IN DESIGN, INTERNAL OR EXTERNAL
CONSTRUCTIONS WITHOUT PRIOR APPROVAL OF ~~DUPLICATE~~. SUCH
UNAUTHORIZED CHANGES MAY BE CAUSE FOR REJECTION AND
RETURN.
3. OUTLINE
SOLID STATE RELAY WITH 2 CIRCUITS BUILT IN
LINE VOLTAGE ; 100V/150V
6A CIRCUIT ; HALOGEN LAMP PHASE CONTROL
12A CIRCUIT ; HEATER TEMPERATURE CONTROL
4. SPECIFICATION
 - 4.1 ELECTRICAL RATING AND TEMPERATURE RATING
 - (1) RECOMMENDED CONDITION

<u>ITEM</u>	<u>MARK</u>	<u>UNIT</u>	<u>RATED VALUE</u>	<u>CONDITION</u>
MAIN CIRCUIT VOLTAGE	Ea	V	80 TO 132	EFFECTIVE VALUE Ta=-20°C - +80°C
FREQUENCY	f	Hz	45 TO 65	SINE WAVE
INPUT SIGNAL VOLTAGE	-	V	4.0 TO 5.5	DC Ta=-20°C - +80°C

	P-710 DWG TRANSLATION SHEET	SHEET 3 OF 9
PART NAME HIC - SSR (100V/115V)		REV. K 1

NOTE

(2) MAXIMUM RATING

ITEM	MARK	UNIT	RATED VALUE		CONDITION
			12A	6A	
CURRENT	Ia	A	12	6.0	(1)
SERGE ON CURRENT	I _{TSM}	A	170	60	(2)
AMBIENT TEMP.	Ta	°C	-20 - +80		
STORAGE TEMP.	T _{stg}	°C	-20 - +80		
DIELECTRIC STRENGTH	-	V	1500		(3)
INPUT SIGNAL VOL.	-	V	6.0		(4)
INPUT SIGNAL REVERSE VOL.	-	V	6.0		(4)
PEAK REPETITION OFF VOL	-	V	400		(5)
PEAK NONREPETITION OF VOL	-	V	450		(5)
INPUT SIGNAL CURRENT	-	mA	42		(6)
THRESHOLD OFF VOL	dv/dt	V/usec	50		(7)
RISE RATIO	-				

CONDITIONS

- (1) TEMP. OF BASE METAL PLATE BELOW TRIAC T_B=77°C
CONTINUOUS EFFECTIVE VALUE
- (2) 60Hz SINE WHOLE WAVE 1 CYCLE CREST VALUE NON
REPETITION Ta=25°C
- (3) SF12D-8329
BETWEEN INPUT AND OUTPUT TERMINAL AND BETWEEN OF
OUTPUT TERMINAL BASE PLATES AC60Hz, 1 MINUTE
Ta=25°C
- (4) DC VOLTAGE Ta=-20°C - +80°C (INPUT SIGNAL TRIGGER
PULSE WIDTH)
- (5) SF12D-8329 Ta=-20°C - +80°C
- (6) INPUT SIGNAL VOLTAGE DC 6V (INPUT SIGNAL TRIGGER
PULSE WIDTH)
- (7) APPLIED VOLTAGE 200V PEAK Tj=125°C

P-710 DWG TRANSLATION SHEET		SHEET 4 OF 9
PART NAME	HIC -SSR (100V/115V)	REV. K 1

NOTE

4.2 ELECTRICAL/THERMAL CHARACTERISTICS

ITEM	UNIT	MIN	NOM	MAX	CONDITION
CURRENT LEAKAGE AT OPEN CIRCUIT	mA	-	4.6	7	SF12D-8329H Ea=240V 12A/6A CIRCUIT AC 60HZ Ta=-20°C - +80°C
VOLTAGE FALL AT CLOSE CIRCUIT	V	-	-	2.0	12A CIRCUIT Ia=12A
		-	-	1.5	6A CIRCUIT Ta=25°C
RESPONSE TIME	CYCLE	-	-	1/2+	AC50, 60Hz, Ea=240V, 1ms RESISTANCE LOAD Ta=- 20°C - +80°C
ON CONDITION LOSS	W	-	-	15.2	12A CIRCUIT, Ia=12A, Ta=40°C
	W	-	-	8.4	6A CIRCUIT, Ia=6A, Ta=40°C
OFF CONDITION LOSS	W	-	-	0.1	SF12D-8329 Ea=120V
THERMAL RESISTANCE	°C/W	-	-	2.4	12A CIRCUIT
		-	-	3.2	6A CIRCUIT
CASE TEMPERATURE	°C	-	-	-	
PICK UP VOLTAGE	V	-	-	4.0	Ea=120V, Ia=0.5A (SF12D-8329H)
DROP OUT VOLTAGE	V	1.0	-	-	Ta=-20°C - +80°C
PICK UP CURRENT	mA	-	-	24	SF12D-8329, Ea=120V, Ia=0.5A, Ta=-20°C - +80°C
DROP OUT CURRENT	mA	1.0	-	-	Ea=120V, Ia=0.5A(SF12D-8329H)
INPUT RESISTANCE	OHM	-	121	-	Ta=25°C
INSULATIVE RESIST.	OHM	100	-	-	BETWEEN INPUT-OUTPUT TERMINALS, INPUT- OUTPUT BASE PLATES AT DC500V MEGA, Ta=25°C

4.3 MECHANICAL RATITNG

SS RELAY ATTACHMENT SCREW TIGHTENING TORQUE;
 NOMINAL 15KGFCM, MAX 23KGFCM,
 NOMINAL VALUE RECOMMENDED WHEN SS RELAY IS ATTACHED
 TO IRON FIN BY IRON M4 SCREWS

PART NO.	P-710 DWG TRANSLATION SHEET	SHEET 5 OF 9
PART NAME	HIC - SSR (100V/115V)	REV. K 1

NOTE 5. THIS SHEET SHOWS THE OUTER CONFIGURATION , TERMINAL AND MARKING. NOMINAL TOLERANCE ; $\pm 0.5\text{MM}$, TOLERANCE NONCUMULATIVE

5.1

MARKING

MAKE THE FOLLOWING MARKING AS THE ARROW DIRECTION TO BE THE UPPER DIRECTION OF LETTERS. STAMP PERMISSIBLE. ENGLISH LETTERS AND NUMBERS, MARKING SHALL BE PERMANENT. OTHER MARKING PERMISSIBLE IF REQUIRED.

██████████ PART NUMBER, MANUFACTURER'S PART NUMBER, MANUFACTURED DATE, LOT NUMBER, MANUFACTURER'S NAME, "AC115V 6A/12A"

5.2

TERMINAL

NIPPON MOLEX CO., LTD. 5283-03A OR EQUIVALENT SHALL BE SUITABLE TO 5198-03, PIN NUMBER "1", "2" AND "3" SHALL BE MARKED AS SHOWN.

5.3

TERMINAL

FASTEN TAB #250 OR EQUIVALENT SHALL BE SUITABLE ██████████ (NIPPON TANSHI CO., LTD. 60409103) PIN NUMBERS "5b", "6b" and "7b" SHALL BE MARKED.

	P-710 DWG TRANSLATION SHEET	SHEET 6 OF 9
PART NAME HIC - SSR (100V/115V)		REV. K 1

NOTE 6. SHOWS THE INSIDE CIRCUIT DIAGRAM.
REFERENCE ONLY.

<u>MARK</u>	<u>NAME</u>	
R11	RESISTANCE	22 OHM 1/4W
R12	↓	↓
R21	↓	↓
R22	↓	↓
R31	RESISTANCE	68 OHM 1/4W
R32	↓	↓
R41	RESISTANCE	47 OHM 1/4W
R42	↓	↓
R51	RESISTANCE	220 OHM 1/4W
R52	↓	↓
R61	RESISTANCE	270 OHM 1/4W
R62	↓	↓
C1	CAPACITOR	0.1uF400V
C2	↓	↓
BCR1*	TRIAC	BCR16X-10
BCR2*	↓	BCR10Y-10
PC1*	PHOTO CAPLER	PHOIB-12
PC2*	↓	↓

* EQUIVALENT PERMISSIBLE, THIS SPECIFICATION SHALL BE
SATISFIED.

	P-710 DWG TRANSLATION SHEET	SHEET 7 OF 9
PARTNAME	HIC - SSR (100V/115V)	REV. K 1

NOTE

7. SAFETY REQUIREMENTS

- 7.1 THE FOLLOWING STANDARDS TO BE SATISFIED WHEN PARTS USED BEING BUILT IN APPLIED PRODUCTS.
- (1) DENTORY TECHINICAL REQUIREMENT APPENDIX 8-1 AND 8-2
 - (2) UL 114
 - (3) CSA C22.2 NO. 143
- 7.2 USE THE PLASTIC MATERIAL OF UL 94V-2 OR OF BETTER GRADE
- 7.3 ANTI-NOISE PROPERTY
- THE PRODUCT SAFETY STANDARD OF , C11 - 6.2, 17.5 SHALL BE SATISFIED.
- 800ns SQUARE WAVE PULSE TEST TO BE ADDED.
- NO MALFUNCTION. REFER TO THE FOLLOWING FOR THE TEST CIRCUIT.

THE LEFT CIRCUIT ; NORMAL MODE
THE RIGHT CIRCUIT ; COMMON MODE

[REDACTED]	P-710 DWG TRANSLATION SHEET	SHEET 8 OF 9
PARTNAME	HIC - SSR (100V/115V)	REV. K 1

NOTE 8. RELIABILITY REQUIREMENTS

8.1 LIFE

NO MALFUNCTION DURING 5-YEAR RUNNING UNDER THE FOLLOWING CONDITIONS

(1) 12A CIRCUIT

PER "PARTS RELIABILITY TEST PROCEDURES TEST NO. 2416" ISSUED BY [REDACTED] EQ DEPT.

(2) 6A CIRCUIT

135000 TIMES OF PATTERN (a) OR (b) UNDER THE (c) CONDITIONS

(C) ATTACH THIS SSR TO t2.0 ALUMINUM PLATE. THE TEMPERATURE JUST BELOW THE JUNCTION TO BE 64 +5, -20C.

[REDACTED] 4	P-710 DWG TRANSLATION SHEET	SHEET 9 OF 9
PARTNAME	HIC - SSR (100V/115V)	REV. K 1

NOTE 1. PURCHASED FROM MITSUBISHI ELECTRIC CORPORATION

MANUFACTURER'S PART NO. ; SF12D-8329