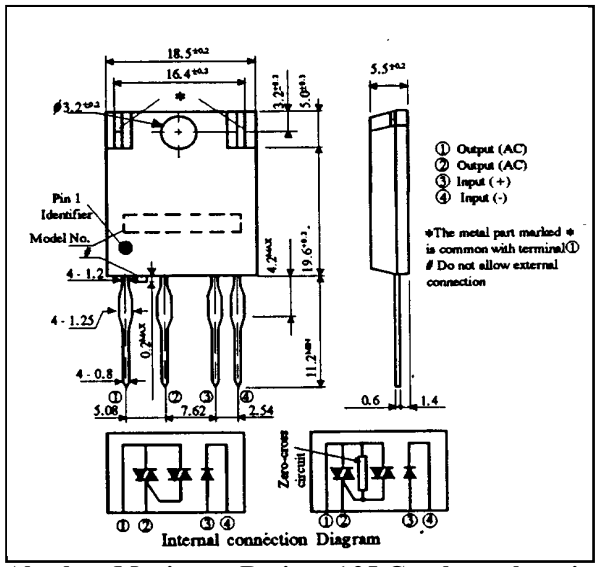
SOLID STATE RELAYS - 4 PIN PACKAGE

ISRT44080 / ISRT46080 / ISRT44160 / ISRT46160
ISRX44080 / ISRX46080 / ISRX44160 / ISRX46160

PACKAGE DRAWING (dimensions in mm)



Features

Compact Package - 4 Pin SIP
High Off-State Voltage 400 / 600 V
Zero-cross Option - ISRX Series
High Isolation - 4000Vrms
High Current - 8A / 16A

Available Types

Function	I_{MAX}	120Vac	240Vac
Non-Zero-Cross	8A	ISRT44080	ISRT46080
	16A	ISRT44160	ISRT46160
Zero-Cross	8A	ISRT44080	ISRT46080
	16A	ISRX44160	ISRX46160

Absolute Maximum Ratings (25°C unless otherwise stated)

PARAMETER			RATING				UNIT
			ISRT44080 ISRX44080	ISRT46080 ISRX46080	ISRT44160 ISRX44160	ISRT46160 ISRX46160	
INPUT	Forward Current	I_F	50	50	50	50	mA
	Reverse Current	V_R	6	6	6	6	V
OUTPUT	RMS on-state current	I_T	8 *1	8 *1	16 *2	16 *2	A_{RMS}
	Peak one cycle surge current	I_S	80 *3	80 *3	160 *3	160 *3	A
	Repetitive peak off-state Voltage	V_{DRM}	400	600	400	600	V
	Non-repetitive peak off-state V	V_{DSM}	400	600	400	600	V
	Critical rate of rise of on-state I	dI/dt	50	50	50	50	A/uS
	Operating Frequency	f	45-65	45-65	45-65	45-65	Hz
Isolation Voltage *4		V_{ISO}	4000	4000	4000	4000	Vrms
Operating Temperature		T_{OPR}	-25 ~ +100	-25 ~ +100	-25 ~ +100	-25 ~ +100	°C
Storage Temperature		T_{STG}	-30 ~ +125	-30 ~ +125	-30 ~ +125	-30 ~ +125	°C
Soldering Temperature (10 secs)		T_{SOL}	260	260	260	260	°C

*1 T_c=80°C, *2 T_c=60°C *3 50/60Hz AC sine wave, T_J=25°C start
*4 50/60 Hz AC 1 minute between input and output, zero-cross switching dielectric tester, input shorted, output shorted.

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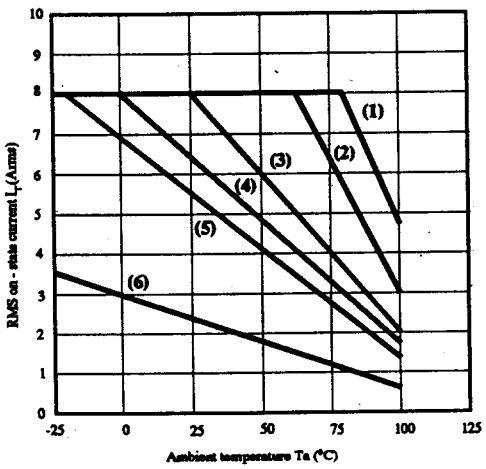
ELECTRICAL CHARACTERISTICS (25oC unless otherwise stated)

PARAMETER			CONDITION	MIN	TYP	MAX	UNIT
Input	Forward Voltage	V_F	I_F = 20mA		1.2	1.4	V
	Reverse Current	I_R	V_R = 3V			10^{-4}	A
Output	Repetitive off-state Current	I_{DRM}	$V_D = V_{DRM}$ (Rated)			10^{-4}	A
	On-state Voltage (8 Amp series)	V_T	I_F = 20mA, I_T = 2A rms			1.5	Vrms
	(16Amp series)		I_F = 20mA, I_T = 16A rms			1.5	Vrms
	Holding Current	I_H				50	mA
	Critical rate of rise of off-state voltage	dv/dt	V_D = 2/3 x V_{DRM}	30			V/us
	Critical rate of rise of commutating off-state voltage	dv/dt (c)	T_j = 125 °C V_D = 400V	5			V/us
	Zero-cross Voltage (ISRX series)	V_{OX}	I_F = 8mA			35	V
Transfer characteristics	Minimum Trigger Current (ISRT)series	I_{FT}	V_D = 12V, R_L = 30R			8	mA
	(ISRX)series		V_D = 6V, R_L = 30R			8	mA
	Isolation Resistance	R_{ISO}	500VDC, RH = 40-60%	10^{10}			Ohms
	Turn-on Time ISRT series	T_{ON}	50Hz AC			1	ms
	ISRX series		50Hz AC			10	ms
	Turn-off Time	T_{OFF}				10	ms
Thermal Resistance (junction to case)	8 Amp series	R_{TH}			4.5		°C/W
	16 Amp series				3.3		°C/W
Thermal Resistance (junction to ambient)		R_{TH}			40		°C/W

Fig. 1 RMS On-state Current vs. Ambient Temperature

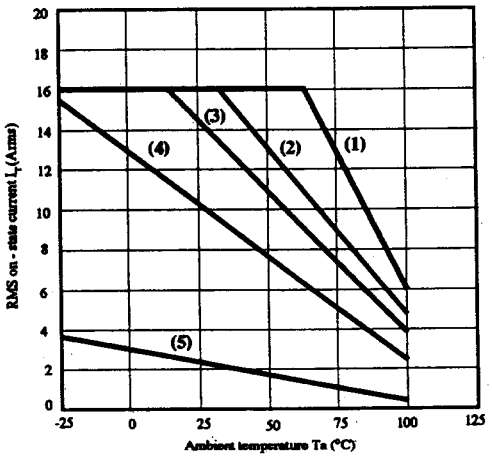
8 Amp Series



(1) With infinite heat sink
(2) With heat sink (200 X 200 X 2mm Al plate)
(3) With heat sink (100 X 100 X 2mm Al plate)
(4) With heat sink (75 X 75 X 2mm Al plate)
(5) With heat sink (50 X 50 X 2mm Al plate)
(6) Without heat sink

Fig. 2 RMS On-state Current vs. Ambient Temperature

16 Amp Series



(1) With infinite heat sink
(2) With heat sink (280 X 280 X 2mm Al plate)
(3) With heat sink (200 X 200 X 2mm Al plate)
(4) With heat sink (100 X 100 X 2mm Al plate)
(5) Without heat sink