

APPLE - HSM (AC)SOLID STATE RELAY



GENERAL	
Operating temperature	- 30 deg. C to 80 deg.C
Operating frequency	47 Hz to 63 Hz
I / O Insulation	2 kV
I / O Isolation base	4 / 6 kV
Weight	@ 30g
Dimensions (L * B * H)	Refer Diagram
LED ON indication on request	

SALIENT FEATURES:

2 KV ISOLATION.
 LOW INPUT CURRENT.
 ZERO VOLTAGE & RANDOM TURN ON.
 TRIAC OUTPUT.
 TRANSIENT IMMUNITY.
 FAST SWITCHING RESPONSE.
 NO NOISE FEEDBACK FROM OUTPUT TO INPUT.
 INPUT REVERSE VOLTAGE PROTECTION.
 A LONGER LIFETIME DUE TO CONTACTLESS SYSTEM.

TECHNICAL DATA (@ TA = 25 ° C)

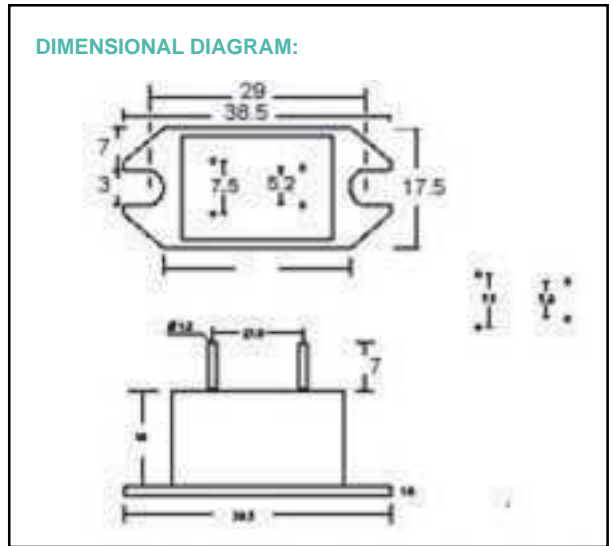
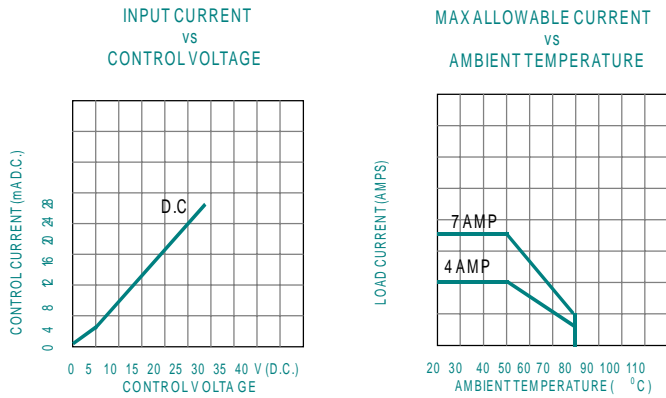
INPUT I _B	MIN	MAX		UNIT
INPUT ON VOLTAGE	5	8.2		V D.C.
INPUT OFF VOLTAGE		2		V D.C.
INPUT CURRENT		2		mA
OUTPUT	SYMBOL	ZERO SWITCHING		UNIT
MAX NOMINAL RMS CURRENT	I _T	4	7	A
LINE VOLTAGE		280	280	V A.C.
MIN LINE VOLTAGE		24	24	V A.C.
SYNCHRONISING VOLTAGE		5-20	5-20	V _{PK}
MAX ON STATE VOLTAGE DROP	V _{TM}	1.6	16	V _{RMS}
PEAK ONE CYCLE SURGE ON STATE CURRENT	I _{TSM}	35	40	A
LEAKAGE CURRENT	I _{DRM}	50	50	mA
TURN ON TIME	T _{ON}	10 (0.05)	10 (0.05)	mS
TURN OFF TIME	T _{OFF}	10	10	mS
RATE OF RISE OF OFF STATE VOLTAGE	dv / dt	100	100	V/mS
HOLDING CURRENT	I _{HO}	50	50	mA
FUSING CURRENT	I _t	36	40	A ² S
THERMAL RESISTANCE (JUNCTION-CASE)	Q _{JC}	4	4	°C/W

NOTE:

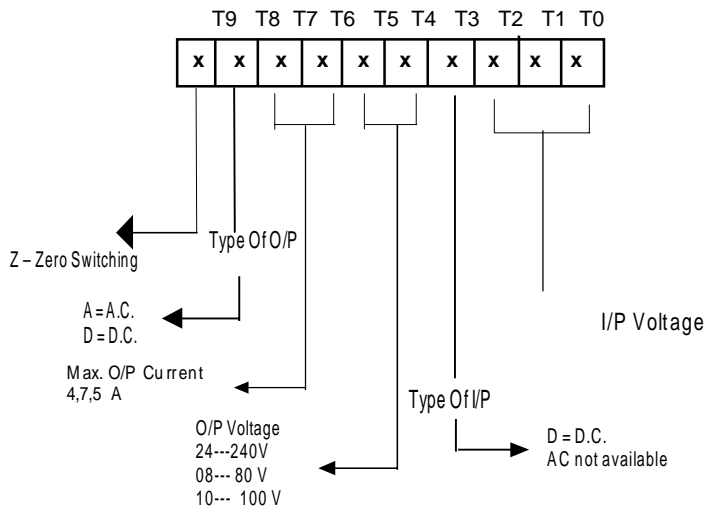
1. Ratings are based on single mounted unit in free airflow for closely packed units. Careful consideration of ambient temperature will be necessary on account of restricted airflow.
2. Use of metal oxide varistor for transient voltage protection, and semi conductor protection is recommended.
3. For load current above 3A, heat sink is to be used. To select heat sink, consult manufacturer.
4. Ensure correct input supply, relay operation may be erratic for inputs between 1-4VDC.
5. For ordering information, please refer to the **SOLID STATE RELAY SELECTION GUIDE** .

Specifications subject to change without notice.

INPUT OUTPUT CHARACTERISTIC:



SELECTION CRITERIA:



e.g. =>ZA724D528

- Z = Zero Switching
- A = A.C. O/P
- 7 = 7 A (Max O/P Current)
- 24 = 240 V A.C. O/P
- D = D.C. I/P
- 528 = 5 To 28 V I/P

APPLE HSM Series DC-DC SOLID STATE RELAYS

- Miniature PCB/Heat sink mounting.TO3 base
- Best suitable for
- Ultra low output leakage current
- Low control current consumption triggered control input to avoid linear control risks



PCB solderable TO3 Casing
Spring Terminals To3 Casing

TABLE 1

DC Mains Voltage Range	Load Current Range	Output Device	Control Input Voltage	Isolation
60 VDC (max) Depends on Clamping Protection	10 A DC contineous (with Heat Sink)	Transistor/Mosfet	5/12/24 VDC	2KV

TABLE 2

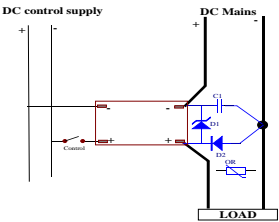
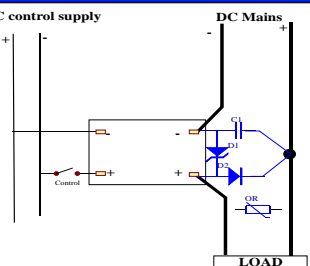
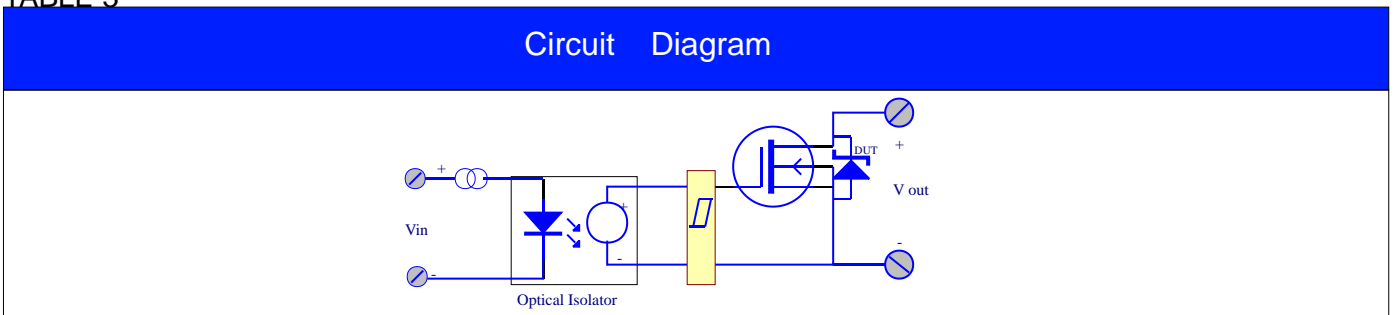
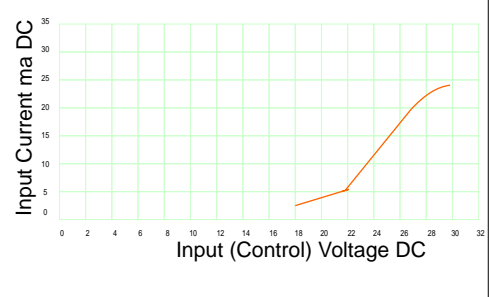
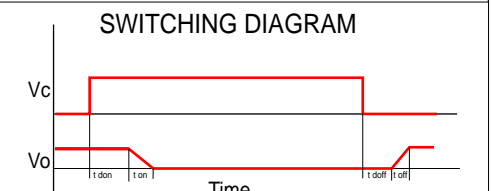
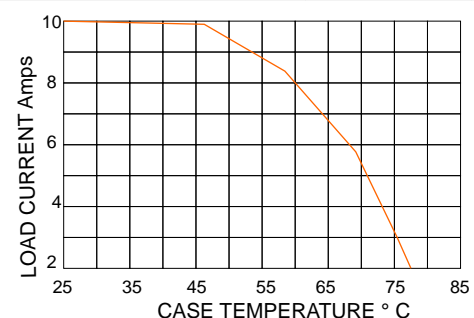
Connection diagram (Load Connected to +Ve Side)	Connection diagram (Load Connected to - Ve Side)
 <p style="text-align: center;">Please consult us to select correct protective components C1 , D1 , D2</p>	 <p style="text-align: center;">Please consult us to select correct protective components C1 , D1 , D2</p>

TABLE 3



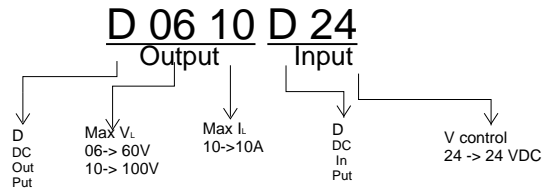
INPUT PARAMETERS	Parameters	Unit	Value	Remark	Input Voltage Vs Input Current	
	Working Input Voltage	V dc	24			
	Working Input Current	ma dc	18			
	Input Voltage Range	V dc	18 - 30	min 18 V		
	Input Current Range	ma dc	10- 30	ref Graph		
	Releasing Input Voltage	V dc	< 4			
	Max. Reverse Voltage	V dc	-40			
	Impedence	R in	< 1K Ohms	Ref Graph		
	Turn On Time	t on	10 uSecs			
	Turn ON Time Delay	t don	200uSecs			
	Turn OFF Time	t off	10 u Secs			
	Turn OFF Time Delay	t d off	120 uSecs			

OUTPUT \ LOAD SIDE PARAMATERS	Parameters	Unit	Value	Remark
	Max Continuous DC Voltage	V DC	60	For Inductive Load Clamping needed
	Max. Non Repetative Voltage	V DC	75	Clamping Device Protection needed
	Over Voltage Protection		Not included external to be used	
	Reverse Max Voltage	V DC	< 1VDC	Due to reverse diode across 1 & 2
	Load Current (Max)Resistive	Amps	10	Refer Table 1 . Contact us for Inductive Loads
	OFF State Leakage Current	µ Amps	10 /80 µA	Current @ 30°C / 90°C
	Junction / Case Thermal Res.	R thjc	1.6 °/ W	
	Isolation Input /Output	V AC	2KV	
	Isolaion Body / Live terminals	V AC	4 KV	
	Max Case Temperature	T c	95°C	Cooling with Heat sink/Air Flow design*



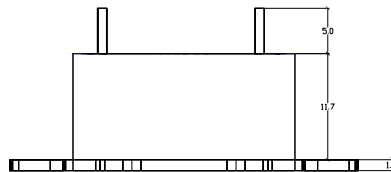
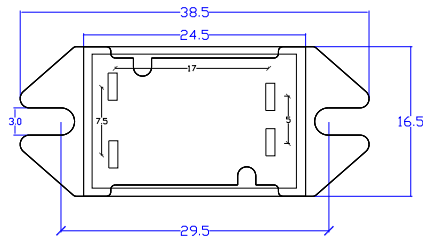
- >Heat sink design is based on Current required & switching duty cycle.
- >Cooling is necessary if case temperature rises above 80°C. Cooling could be Forced air cooled or in extreme conditions water cooled.
- >Rise in case temperature may result in malfunction of switching functions.

Ordering Information:



Example: D0610D24
 Output -> 10ADC , Vload max 60VDC
 Input -> 18 > Vin > 30

DIMENSION DETAILS



All Dimensions are in mm(millimeter)