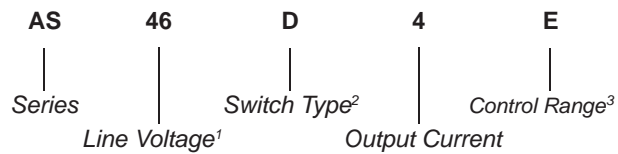


Part Number	Description
AS24D4E/R	4A, 275 Vac
AS24D4E-X1	4A, 275 Vac
AS24D4E-X2	4A, 275 Vac

#### Part Number Explanation



#### NOTES

- 1) Line Voltage (nominal): 46 = 460 Vac
- 2) Switch Type: D = Zero-cross turn-on
- 3) Control Range: E = 4–30 Vdc (5–30 Vdc for AS60D4E)
- 4) RoHS Compliant = /R (AS24D4E/R)

#### MECHANICAL SPECIFICATION

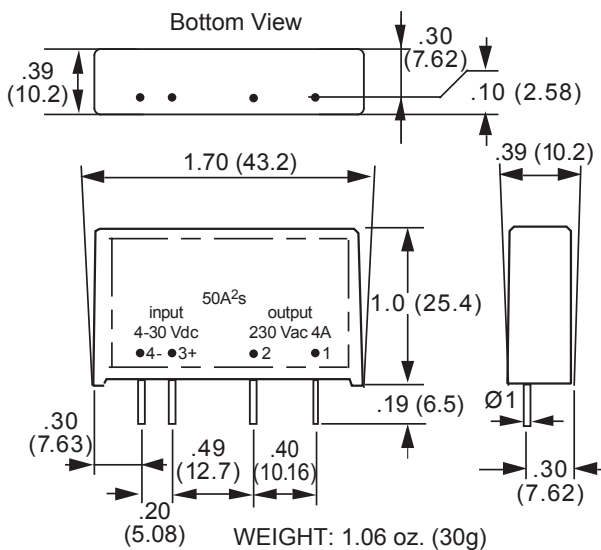
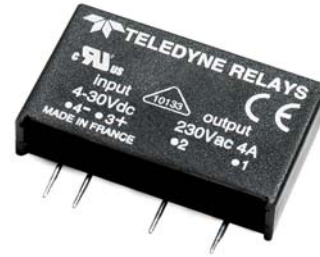


Figure 1 — AS relays; dimensions in inches (mm)

#### ELECTRICAL SPECIFICATIONS

	Min	Max	Units
Operating Temperature	-40	80	°C
Storage Temperature	-40	120	°C
Input-Output Isolation	4000		Vrms
Input-Output Capacitance		3	pF



#### FEATURES/BENEFITS

- Industry standard package
- Tight zero-cross window for low EMI
- Low input current draw
- High dv/dt capability
- Integral transient voltage protection
- High immunity to surges

#### DESCRIPTION

The AS 4-amp and 5-amp solid-state single inline (SIP) four-pin relays are designed for mounting on a printed circuit board. The relays offer built-in voltage protection and can withstand very high current overloads. The Series AS4 relays have a low zero-cross window. The compact size and triac output make the AS relay the perfect retrofit for electromechanical relays.

#### APPLICATIONS

- Interface applications
- Vending machines
- Light/lamp control
- HVAC controls

#### APPROVALS

UL File Number: E128555. (Except AS60D4E)

#### BLOCK DIAGRAM

(Control LED available on AS46R4F-02 only.)

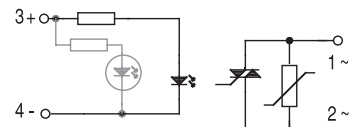


Figure 2a — All AS relays except AS60D4E

**INPUT (CONTROL) SPECIFICATIONS**

	Min	Max	Units
<b>Control Range</b>			
AS24D4E/R	4	30	Vdc
AS46D4E	4	30	Vdc
AS60D4E	5	30	Vdc
<b>Input Current Range</b>			
AS24D4E/R	3	30	mA
AS46D4E	3	30	mA
AS60D4E	3	30	mA
<b>Must Turn-Off Voltage</b>			
AS24D4E/R		0.8	Vdc
AS46D4E		0.8	Vdc
AS60D4E		1	Vdc
<b>Input Resistance (Typical)</b>			
AS24D4E/R		1,000	Ohms
AS46D4E		1,000	Ohms
AS60D4E		1,000	Ohms

**OUTPUT (CONTROL) SPECIFICATIONS**

	Min	Max	Units
<b>Operating Range</b>			
AS24D4E/R	12	275	Vrms
AS46D4E	12	460	Vrms
AS60D4E	24	600	Vrms
<b>Peak Voltage (Clamping Voltage)</b>			
AS24D4E/R		600(450)	Vpeak
AS46D4E		900(720)	Vpeak
AS60D4E		1200	Vpeak
<b>Load Current Range</b>			
AS24D4E/R	.005	4	Arms
AS46D4E	.005	4	Arms
AS60D4E	.005	5	Arms

**OUTPUT (CONTROL) SPECIFICATIONS (Continued)**

	Min	Max	Units	
<b>Maximum Surge Current Rating (Non-Repetitive)</b> (See Figure 5a and Figure 5b)				
AS24D4E/R		100	Apeak	
AS46D4E		100	Apeak	
AS60D4E		120	Apeak	
<b>On-State Voltage Drop</b>				
		1.6	V	
<b>Zero-Cross Window (Typical)</b>				
		±12	V	
<b>Off-State Leakage Current (60Hz)</b>				
AS24D4E/R		0.3	mArms	
AS46D4E		0.3	mArms	
AS60D4E		1	mArms	
<b>Turn-On Time (60Hz)</b>				
AS24D4E/R		8.3	ms	
AS46D4E		8.3	ms	
AS60D4E		8.3	ms	
<b>Turn-Off Time (60Hz)</b>				
		8.3	ms	
<b>Off-State dv/dt</b>				
		500	V/μs	
<b>Operating Frequency</b>				
		10	440	Hz
<b>I<sup>2</sup>T for Match Fusing (&lt;8.3ms)</b>				
AS24D4E/R		50	A <sup>2</sup> S	
AS46D4E		50	A <sup>2</sup> S	
AS46D4E		72	A <sup>2</sup> S	

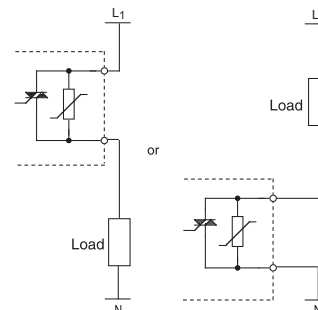
**TYPICAL APPLICATIONS**


Figure 3a

**LOAD CURRENT DERATING CURVE**

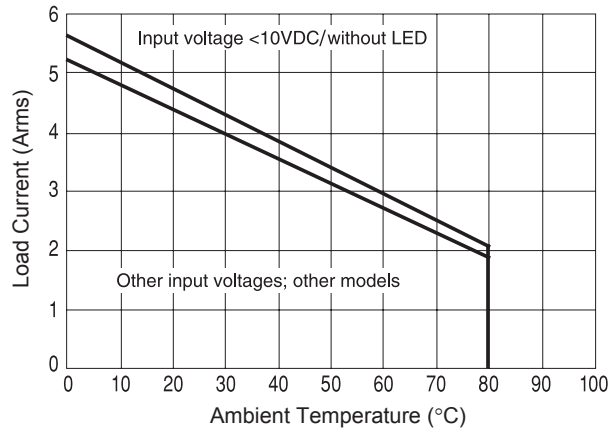


Figure 4 — Thermal curves

**SURGE CURRENT RATING**

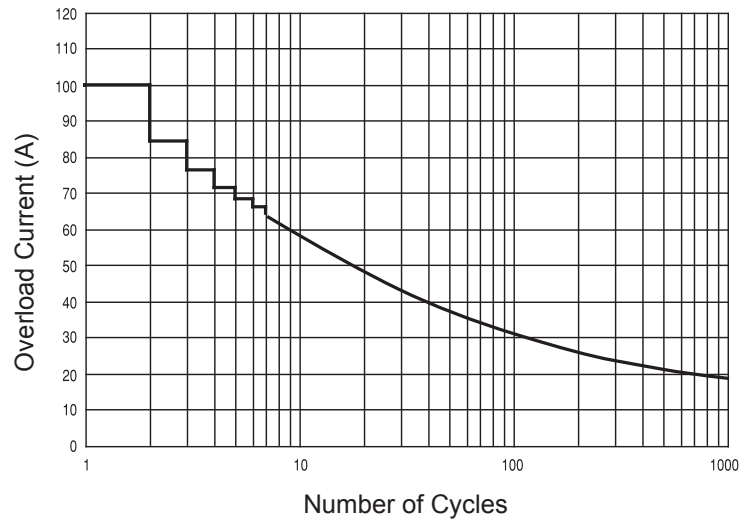


Figure 5a — Non-repetitive surge current

**NOTES:**

1. Electrical specifications at 25°C unless otherwise specified.
2. For 800Hz applications, contact factory.
3. For additional/custom options, contact factory.

**SURGE CURRENT**

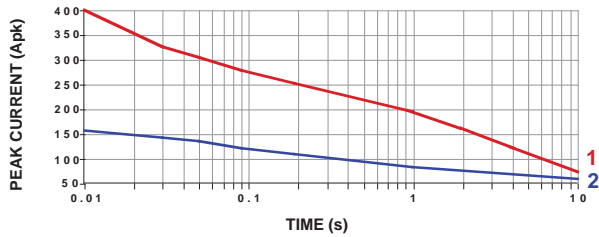


Figure 4c — 35A output current

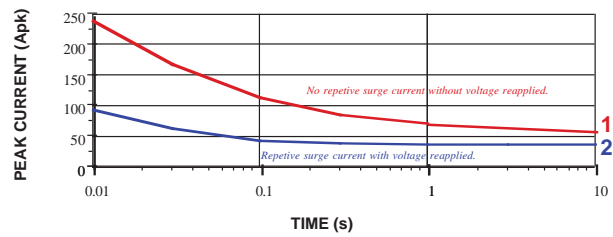


Figure 4b — 25A output current

**THERMAL CURVES**

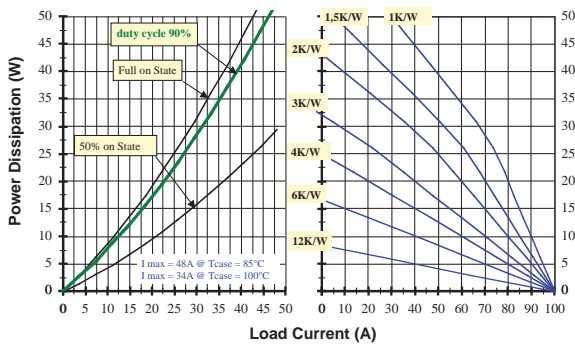


Figure 5c — 35A output power

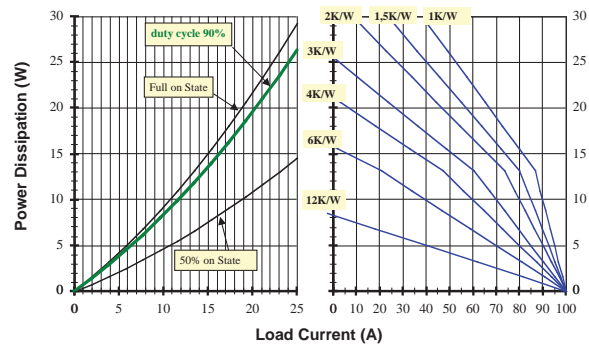


Figure 5b — 25A output power

12°C/W corresponds to a relay without heat sink  
6°C/W corresponds to a relay mounted on a DIN-rail adaptor (Teledyne P/N DL12)

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