

PANEL MOUNT SOLID STATE RELAY ESR50/51/52/53 SERIES

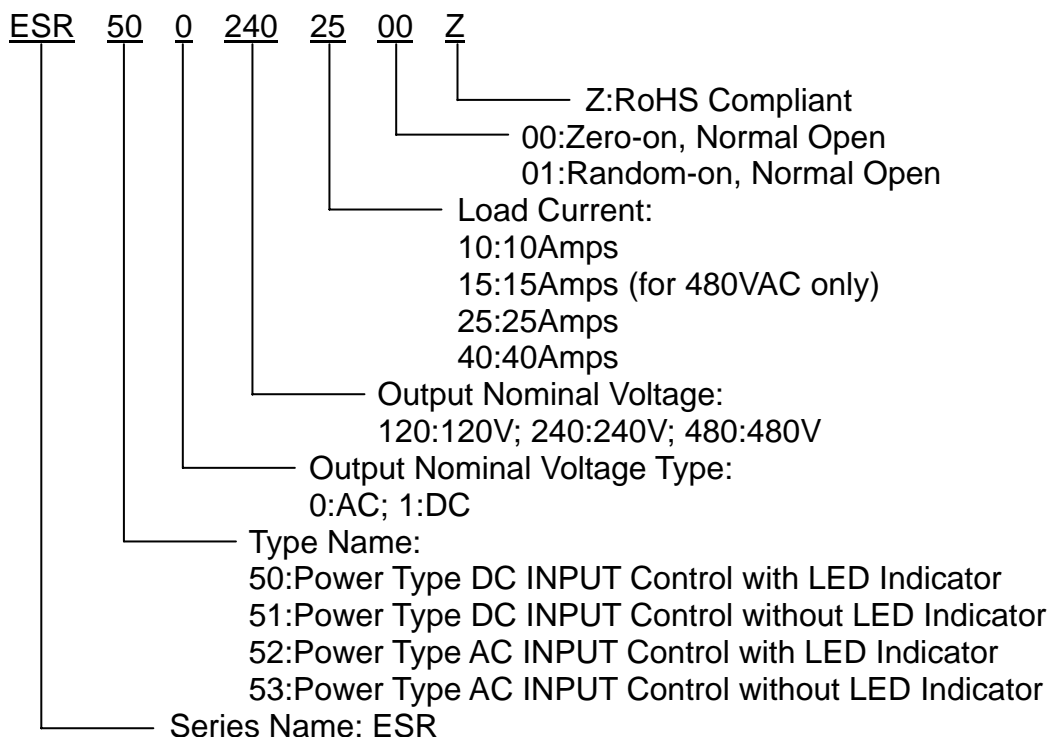


FEATURES

- Optically Isolated.
- Input LED Indicator.
- High dv/dt and High Blocking Voltage.
- Low Input Power Consumption, TTL and CMOS Compatible.
- Zero Voltage Turn-on, Zero Current Turn-off (minizes EMI/RFI).
- High Surge Rating Allows Lamp and Motor Load Switching.
- Output Snubber Circuit Protection.

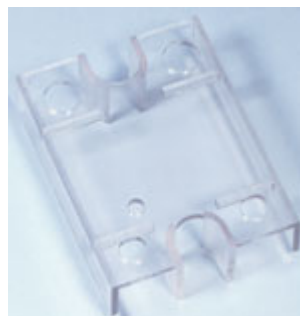


PART NUMBERING SYSTEM



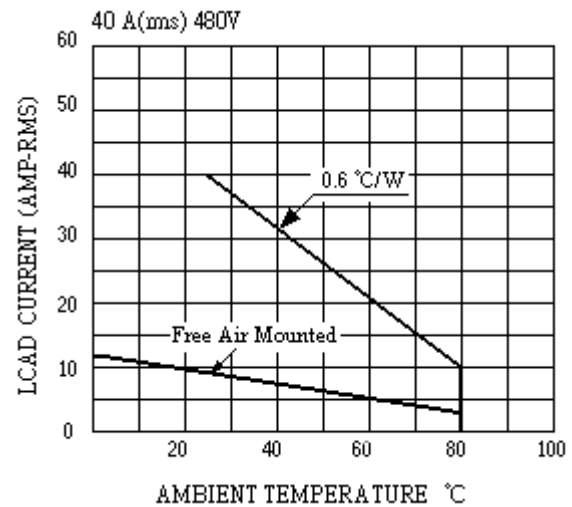
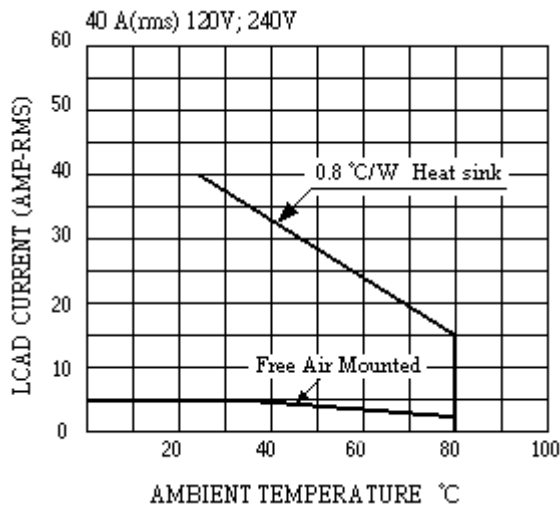
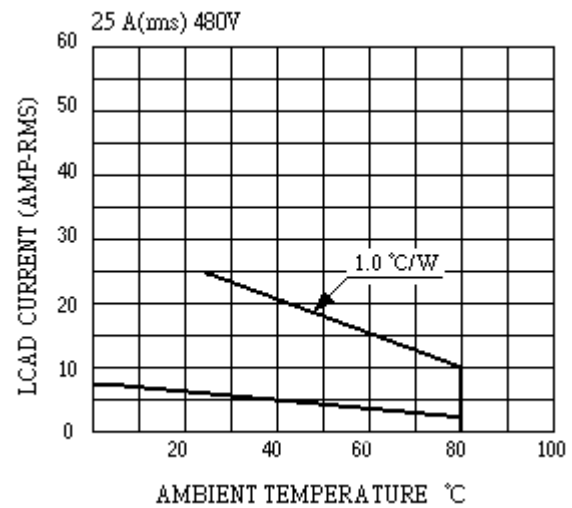
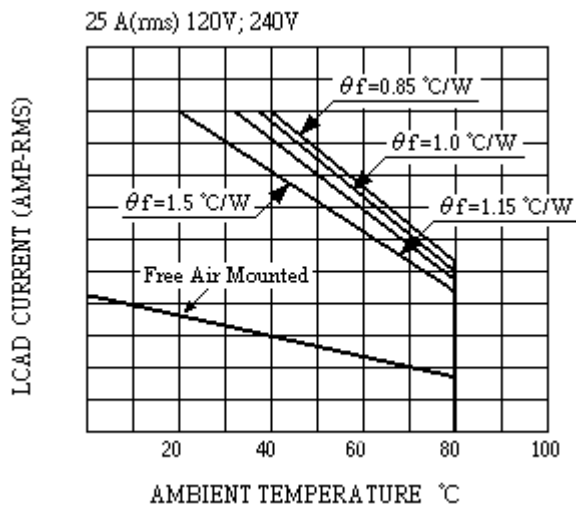
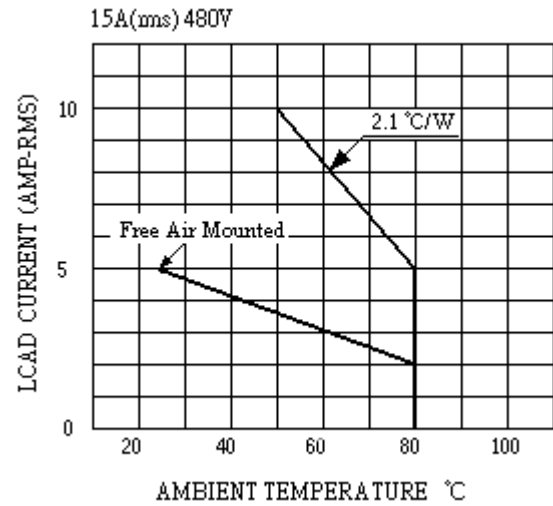
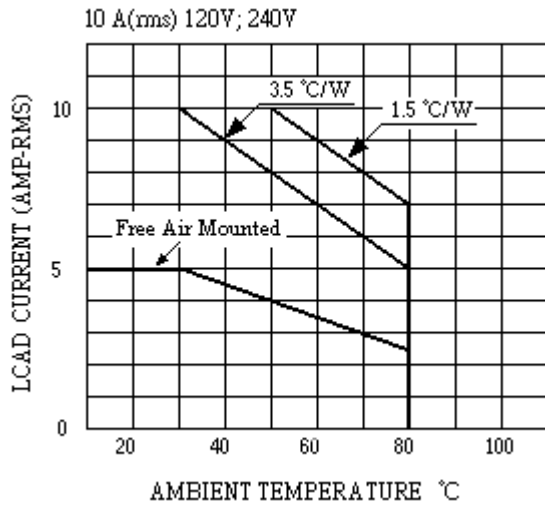
OPTIONS:

Protective cover: 436-41100



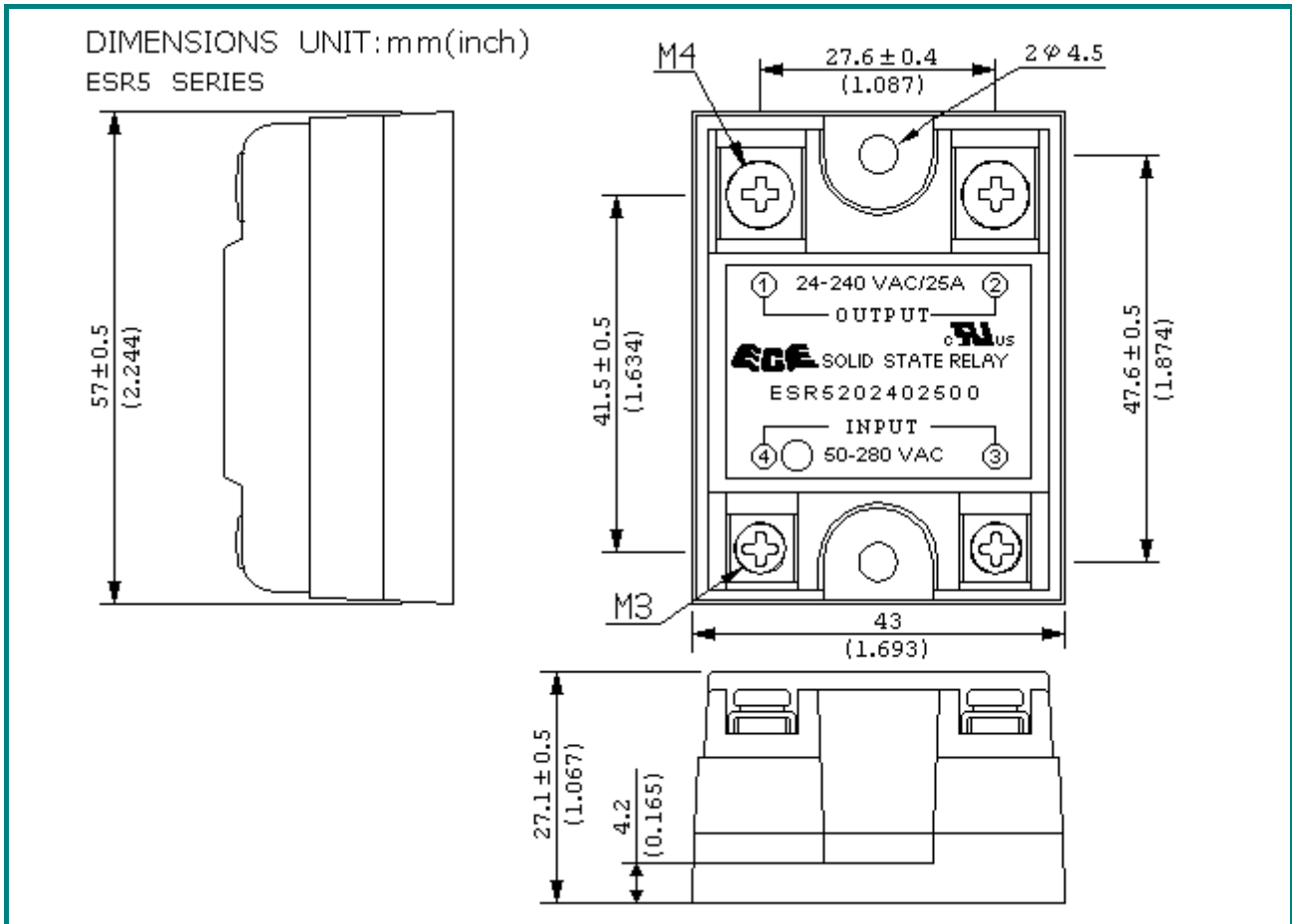


TEMPERAURE DERATING CHART





■ DIMENSIONS



■ SPECIFICATIONS

1.ESR500/ESR510 SERIES (DC INPUT CONTROL)

- MAX. LOAD CURRENT: 10A(rms) 120V;240V
- MAX. LOAD CURRENT: 25A(rms) 120V;240V
- MAX. LOAD CURRENT: 40A(rms) 120V;240V
- MAX. LOAD CURRENT: 15A(rms) 480V
- MAX. LOAD CURRENT: 25A(rms) 480V
- MAX. LOAD CURRENT: 40A(rms) 480V

2.ESR520/ESR530 SERIES (AC INPUT CONTROL)

- MAX. LOAD CURRENT: 10A(rms) 120V;240V
- MAX. LOAD CURRENT: 25A(rms) 120V;240V
- MAX. LOAD CURRENT: 40A(rms) 120V;240V

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 10A(rms) 120V;240V

DESCRIPTION	ESR500		ESR510					
	1201000	2401000	1201001	2401001	1201000	2401000	1201001	2401001
■ INPUT CIRCUIT								
LED Indicate	YES				NO			
Control Voltage Range	4-32 VDC				3-32 VDC			
Control Current	15mA Max.				15mA Max.			
Min. Turn-off Voltage	1.5 VDC				1 VDC			
Input Impedance	2.0K Ω Min.				2.0K Ω Min.			
■ OUTPUT CIRCUIT								
Max. Load Current	10A (rms)				10A (rms)			
Nominal load Voltage (VAC)	120	240	120	240	120	240	120	240
Load Voltage Range (VAC)	24-140	24-280	24-140	24-280	24-140	24-280	24-140	24-280
Non-Repetitive Max. Peak Voltage (VAC)	400	600	400	600	400	600	400	600
Non-Repetitive Max. Peak Current	125A							
Max. Off-state Leakage Current	1mA							
Max. On-state Voltage Drop	1.6V							
Min. Load Current	50mA							
Max. Off-state Slew Rated (dv/dt)	250V/ μ s							
Operating Frequency Range	47Hz ~ 63Hz							
■ GENERAL CHARACTERISTICS								
Zero-on or Random-on	Z		R		Z		R	
Max. Turn -on Time (60Hz)	8.3ms		100 μ s		8.3ms		100 μ s	
Max. Turn-off Time (60Hz)	8.3ms							
Insulation Resistance	DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)							
Dielectric Strength	3.5K VAC(Between Input & Output)							
Capacitance (Input to Output)	15pF Max. (Between Input & Output)							
Operating Temperature	-20 $^{\circ}$ C ~ +80 $^{\circ}$ C							
Storage Temperature	-40 $^{\circ}$ C ~ +100 $^{\circ}$ C							
Heatsink	3.5 $^{\circ}$ C/W(Max. Load Current)							

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 25A(rms) 120V;240V

TYPES DESCRIPTION	ESR500				ESR510			
	1202500	2402500	1202501	2402501	1202500	2402500	1202501	2402501
■ INPUT CIRCUIT								
LED Indicate	YES				NO			
Control Voltage Range	4-32 VDC				3-32 VDC			
Control Current	15mA Max.				15mA Max.			
Min. Turn-off Voltage	1.5 VDC				1 VDC			
Input Impedance	2.0K Ω Min.				2.0K Ω Min.			
■ OUTPUT CIRCUIT								
Max. Load Current	25A (rms)				25A (rms)			
Nominal load Voltage (VAC)	120	240	120	240	120	240	120	240
Load Voltage Range (VAC)	24-140	24-280	24-140	24-280	24-140	24-280	24-140	24-280
Non-Repetitive Max. Peak Voltage (VAC)	400	600	400	600	400	600	400	600
Non-Repetitive Max. Peak Current	260A							
Max. Off-state Leakage Current	7mA							
Max. On-state Voltage Drop	1.6V							
Min. Load Current	100mA							
Max. Off-state Slew Rated (dv/dt)	250V/ μ s							
Operating Frequency Range	47Hz ~ 63Hz							
■ GENERAL CHARACTERISTICS								
Zero-on or Random-on	Z		R		Z		R	
Max. Turn -on Time (60Hz)	8.3ms		100 μ s		8.3ms		100 μ s	
Max. Turn-off Time (60Hz)	8.3ms							
Insulation Resistance	DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)							
Dielectric Strength	3.5K VAC(Between Input & Output)							
Capacitance (Input to Output)	15pF Max. (Between Input & Output)							
Operating Temperature	-20 $^{\circ}$ C ~ +80 $^{\circ}$ C							
Storage Temperature	-40 $^{\circ}$ C ~ +100 $^{\circ}$ C							
Heatsink	1.5 $^{\circ}$ C/W(Max. Load Current)							

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 40A(rms) 120V;240V

TYPES	ESR500				ESR510			
	1204000	2404000	1204001	2404001	1204000	2404000	1204001	2404001
■ INPUT CIRCUIT								
LED Indicate	YES				NO			
Control Voltage Range	4-32 VDC				3-32 VDC			
Control Current	15mA Max.				15mA Max.			
Min. Turn-off Voltage	1.5 VDC				1 VDC			
Input Impedance	2.0K Ω Min.				2.0K Ω Min.			
■ OUTPUT CIRCUIT								
Max. Load Current	40A (rms)				40A (rms)			
Nominal load Voltage (VAC)	120	240	120	240	120	240	120	240
Load Voltage Range (VAC)	24-140	24-280	24-140	24-280	24-140	24-280	24-140	24-280
Non-Repetitive Max. Peak Voltage (VAC)	400	600	400	600	400	600	400	600
Non-Repetitive Max. Peak Current	315A							
Max. Off-state Leakage Current	7mA							
Max. On-state Voltage Drop	1.8V							
Min. Load Current	100mA							
Max. Off-state Slew Rated (dv/dt)	250V/ μ s							
Operating Frequency Range	47Hz ~ 63Hz							
■ GENERAL CHARACTERISTICS								
Zero-on or Random-on	Z		R		Z		R	
Max. Turn -on Time (60Hz)	8.3ms		100 μ s		8.3ms		100 μ s	
Max. Turn-off Time (60Hz)	8.3ms							
Insulation Resistance	DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)							
Dielectric Strength	3.5K VAC(Between Input & Output)							
Capacitance (Input to Output)	15pF Max. (Between Input & Output)							
Operating Temperature	-20 $^{\circ}$ C ~ +75 $^{\circ}$ C							
Storage Temperature	-40 $^{\circ}$ C ~ +100 $^{\circ}$ C							
Heatsink	0.8 $^{\circ}$ C/W(Max. Load Current)							

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 15A(rms) 480V

DESCRIPTION	TYPES	ESR500		ESR510	
		4801500	4801501	4801500	4801501
■ INPUT CIRCUIT					
LED Indicate		YES		NO	
Control Voltage Range		4-32 VDC		4-32 VDC	
Control Current		120mA Max.		120mA Max.	
Min. Turn-off Voltage		1.5 VDC		1.5 VDC	
Input Impedance		270Ω Min.		270Ω Min.	
■ OUTPUT CIRCUIT					
Max. Load Current		15A (rms)		15A (rms)	
Nominal load Voltage (VAC)		440		440	
Load Voltage Range (VAC)		48-480		48-480	
Non-Repetitive Max. Peak Voltage (VAC)		800		800	
Non-Repetitive Max. Peak Current		200A			
Max. Off-state Leakage Current		2mA			
Max. On-state Voltage Drop		1.6V			
Min. Load Current		70mA			
Max. Off-state Slew Rated (dv/dt)		700V/μs			
Operating Frequency Range		47Hz ~ 63Hz			
■ GENERAL CHARACTERISTICS					
Zero-on or Random-on		Z	R	Z	R
Max. Turn -on Time (60Hz)		8.3ms	100 μs	8.3ms	100 μs
Max. Turn-off Time (60Hz)		8.3ms			
Insulation Resistance		DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)			
Dielectric Strength		3.5K VAC(Between Input & Output)			
Capacitance (Input to Output)		15pF Max. (Between Input & Output)			
Operating Temperature		-20°C ~ +75°C			
Storage Temperature		-40°C ~ +100°C			
Heatsink		2.1°C/W(Max. Load Current)			

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 25A(rms) 480V

DESCRIPTION \ TYPES	ESR500		ESR510	
	4802500	4802501	4802500	4802501
■ INPUT CIRCUIT				
LED Indicate	YES		NO	
Control Voltage Range	4-32 VDC		4-32 VDC	
Control Current	120mA Max.		120mA Max.	
Min. Turn-off Voltage	1.5 VDC		1.5 VDC	
Input Impedance	270Ω Min.		270Ω Min.	
■ OUTPUT CIRCUIT				
Max. Load Current	25A (rms)		25A (rms)	
Nominal load Voltage (VAC)	440		440	
Load Voltage Range (VAC)	48-480		48-480	
Non-Repetitive Max. Peak Voltage (VAC)	800		800	
Non-Repetitive Max. Peak Current	250A			
Max. Off-state Leakage Current	1mA			
Max. On-state Voltage Drop	1.6V			
Min. Load Current	120mA			
Max. Off-state Slew Rated (dv/dt)	700V/μs			
Operating Frequency Range	47Hz ~ 63Hz			
■ GENERAL CHARACTERISTICS				
Zero-on or Random-on	Z	R	Z	R
Max. Turn -on Time (60Hz)	8.3ms	100 μs	8.3ms	100 μs
Max. Turn-off Time (60Hz)	8.3ms			
Insulation Resistance	DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)			
Dielectric Strength	3.5K VAC(Between Input & Output)			
Capacitance (Input to Output)	15pF Max. (Between Input & Output)			
Operating Temperature	-20°C ~ +75°C			
Storage Temperature	-40°C ~ +100°C			
Heatsink	1.0°C/W(Max. Load Current)			

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 40A(rms) 480V

DESCRIPTION \ TYPES	ESR500		ESR510	
	4804000	4804001	4804000	4804001
■ INPUT CIRCUIT				
LED Indicate	YES		NO	
Control Voltage Range	4-32 VDC		4-32 VDC	
Control Current	120mA Max.		120mA Max.	
Min. Turn-off Voltage	1.5 VDC		1.5 VDC	
Input Impedance	270Ω Min.		270Ω Min.	
■ OUTPUT CIRCUIT				
Max. Load Current	40A (rms)		40A (rms)	
Nominal load Voltage (VAC)	440		440	
Load Voltage Range (VAC)	48-480		48-480	
Non-Repetitive Max. Peak Voltage (VAC)	800		800	
Non-Repetitive Max. Peak Current	400A			
Max. Off-state Leakage Current	1mA			
Max. On-state Voltage Drop	1.8V			
Min. Load Current	120mA			
Max. Off-state Slew Rated (dv/dt)	900V/μs			
Operating Frequency Range	47Hz ~ 63Hz			
■ GENERAL CHARACTERISTICS				
Zero-on or Random-on	Z	R	Z	R
Max. Turn -on Time (60Hz)	8.3ms	100 μs	8.3ms	100 μs
Max. Turn-off Time (60Hz)	8.3ms			
Insulation Resistance	DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)			
Dielectric Strength	3.5K VAC(Between Input & Output)			
Capacitance (Input to Output)	15pF Max. (Between Input & Output)			
Operating Temperature	-20°C ~ +75°C			
Storage Temperature	-40°C ~ +100°C			
Heatsink	0.6°C/W(Max. Load Current)			

■ SPECIFICATIONS (AC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 10A(rms) 120V; 240V

DESCRIPTION \ TYPES	ESR520		ESR530	
	1201000	2401000	1201000	2401000
■ INPUT CIRCUIT				
LED Indicate	YES		NO	
Control Voltage Range	50-280 VAC		50-280 VAC	
Control Current	15mA Max.		15mA Max.	
Min. Turn-off Voltage	40 VAC		35 VAC	
Input Impedance	106K Ω Min.		106K Ω Min.	
■ OUTPUT CIRCUIT				
Max. Load Current	10A (rms)		10A (rms)	
Nominal load Voltage (VAC)	120	240	120	240
Load Voltage Range (VAC)	24-140	24-280	24-140	24-280
Non-Repetitive Max. Peak Voltage (VAC)	400	600	400	600
Non-Repetitive Max. Peak Current	125A			
Max. Off-state Leakage Current	1mA			
Max. On-state Voltage Drop	1.6V			
Min. Load Current	50mA			
Max. Off-state Slew Rated (dv/dt)	250V/ μ s			
Operating Frequency Range	47Hz ~ 63Hz			
■ GENERAL CHARACTERISTICS				
Zero-on or Random-on	Z		Z	
Max. Turn -on Time (60Hz)	10ms		10ms	
Max. Turn-off Time (60Hz)	20ms			
Insulation Resistance	DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)			
Dielectric Strength	3.5K VAC(Between Input & Output)			
Capacitance (Input to Output)	15pF Max. (Between Input & Output)			
Operating Temperature	-20 $^{\circ}$ C ~ +80 $^{\circ}$ C			
Storage Temperature	-40 $^{\circ}$ C ~ +100 $^{\circ}$ C			
Heatsink	3.5 $^{\circ}$ C/W(Max. Load Current)			

■ SPECIFICATIONS (AC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 25A(rms) 120V; 240V

DESCRIPTION	TYPES	ESR520		ESR530	
		1202500	2402500	1202500	2402500
■ INPUT CIRCUIT					
LED Indicate		YES		NO	
Control Voltage Range		50-280 VAC		50-280 VAC	
Control Current		15mA Max.		15mA Max.	
Min. Turn-off Voltage		40 VAC		35 VAC	
Input Impedance		106K Ω Min.		106K Ω Min.	
■ OUTPUT CIRCUIT					
Max. Load Current		25A (rms)		25A (rms)	
Nominal load Voltage (VAC)		120	240	120	240
Load Voltage Range (VAC)		24-140	24-280	24-140	24-280
Non-Repetitive Max. Peak Voltage (VAC)		400	600	400	600
Non-Repetitive Max. Peak Current		260A			
Max. Off-state Leakage Current		7mA			
Max. On-state Voltage Drop		1.6V			
Min. Load Current		100mA			
Max. Off-state Slew Rated (dv/dt)		250V/ μ s			
Operating Frequency Range		47Hz ~ 63Hz			
■ GENERAL CHARACTERISTICS					
Zero-on or Random-on		Z		Z	
Max. Turn -on Time (60Hz)		10ms		10ms	
Max. Turn-off Time (60Hz)		20ms			
Insulation Resistance		DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)			
Dielectric Strength		3.5K VAC(Between Input & Output)			
Capacitance (Input to Output)		15pF Max. (Between Input & Output)			
Operating Temperature		-20 $^{\circ}$ C ~ +80 $^{\circ}$ C			
Storage Temperature		-40 $^{\circ}$ C ~ +100 $^{\circ}$ C			
Heatsink		1.5 $^{\circ}$ C/W(Max. Load Current)			

■ SPECIFICATIONS (AC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 40A(rms) 120V; 240V

DESCRIPTION \ TYPES	ESR520		ESR530	
	1204000	2404000	1204000	2404000
■ INPUT CIRCUIT				
LED Indicate	YES		NO	
Control Voltage Range	50-280 VAC		50-280 VAC	
Control Current	15mA Max.		15mA Max.	
Min. Turn-off Voltage	40 VAC		35 VAC	
Input Impedance	106K Ω Min.		106K Ω Min.	
■ OUTPUT CIRCUIT				
Max. Load Current	40A (rms)		40A (rms)	
Nominal load Voltage (VAC)	120	240	120	240
Load Voltage Range (VAC)	24-140	24-280	24-140	24-280
Non-Repetitive Max. Peak Voltage (VAC)	400	600	400	600
Non-Repetitive Max. Peak Current	315A			
Max. Off-state Leakage Current	7mA			
Max. On-state Voltage Drop	1.8V			
Min. Load Current	100mA			
Max. Off-state Slew Rated (dv/dt)	250 V/ μ s			
Operating Frequency Range	47Hz ~ 63Hz			
■ GENERAL CHARACTERISTICS				
Zero-on or Random-on	Z		Z	
Max. Turn -on Time (60Hz)	10ms		10ms	
Max. Turn-off Time (60Hz)	20ms			
Insulation Resistance	DC 500V 10 ⁹ Ω Min. (Between Input & Output, Input / Output & Case)			
Dielectric Strength	3.5K VAC(Between Input & Output)			
Capacitance (Input to Output)	15pF Max. (Between Input & Output)			
Operating Temperature	-20 $^{\circ}$ C ~ +75 $^{\circ}$ C			
Storage Temperature	-40 $^{\circ}$ C ~ +100 $^{\circ}$ C			
Heatsink	0.8 $^{\circ}$ C/W(Max. Load Current)			