



SOLID STATE RELAY ESR50/51/52/53 SERIES

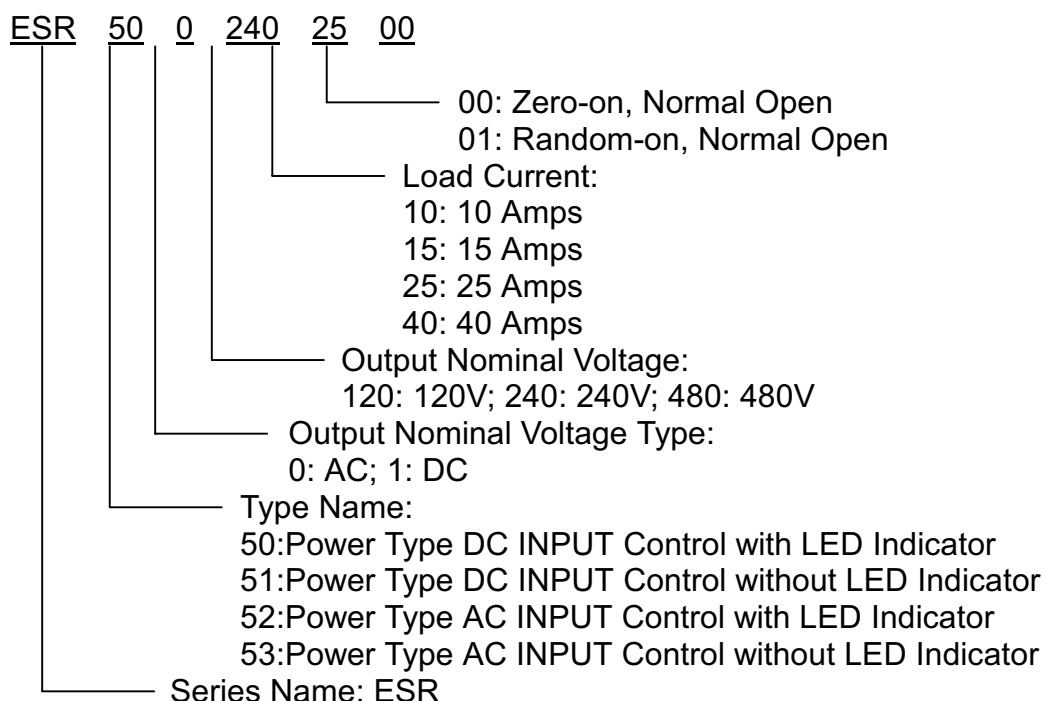
PANEL MOUNT

■ 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

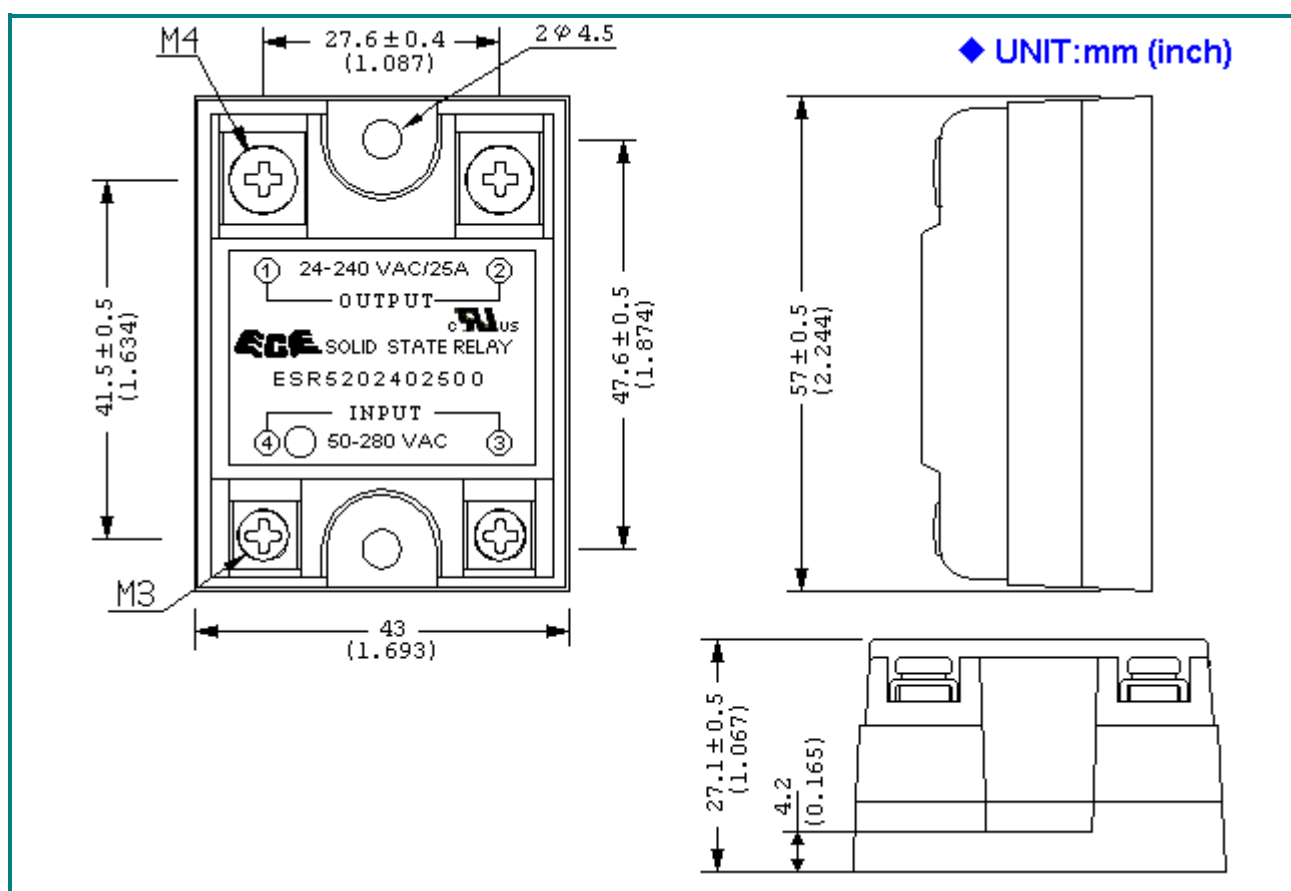


■ OPTIONS:

Protective cover: 436-41100

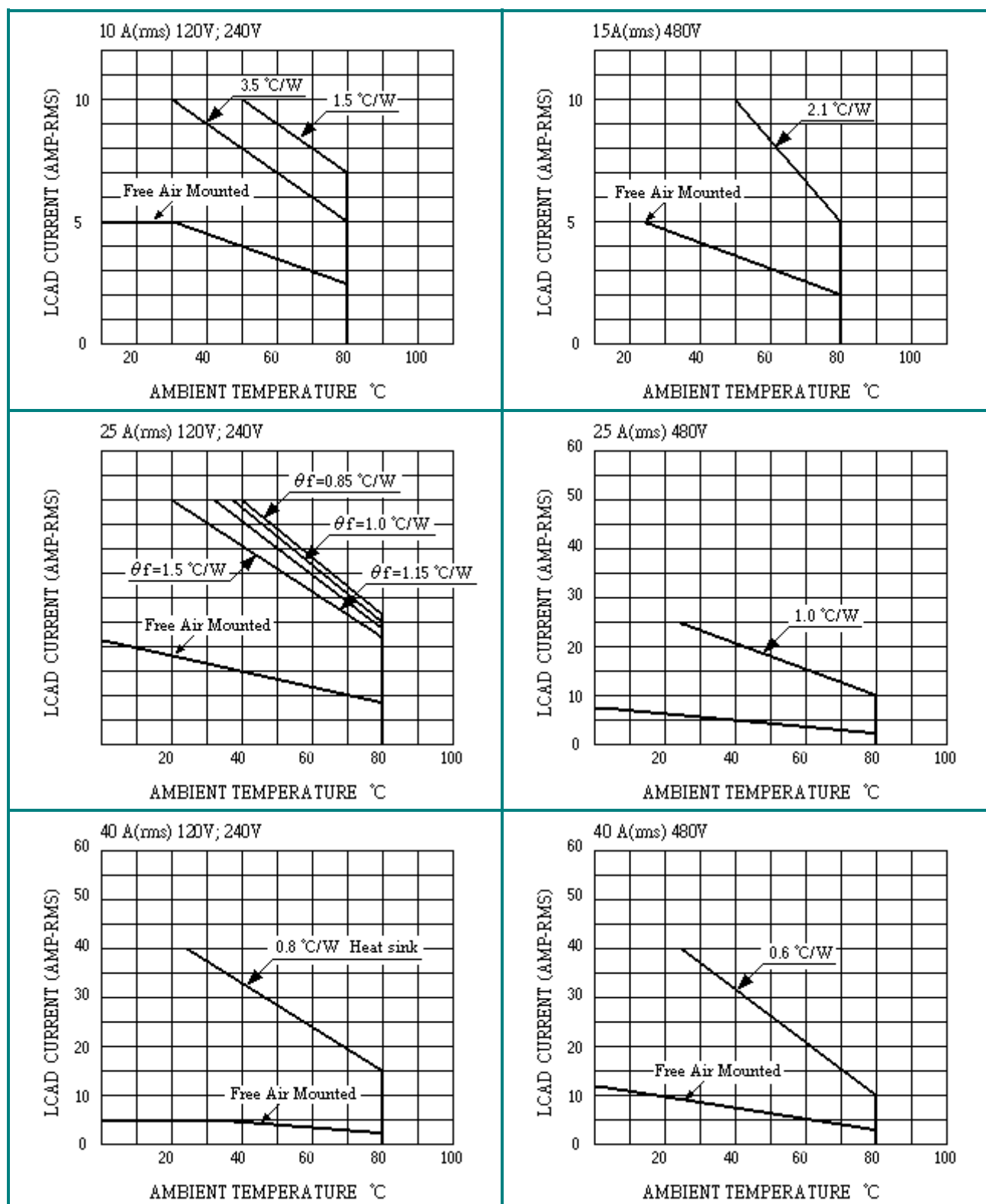


■ DIMENSIONS





TEMPERAURE DERATING CHART



■ 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

DATAS \ TYPES	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	15 mA Max.				15 mA Max.			
Min. Turn-off Voltage	1.5 VDC				1 VDC			
Input Impedance	2.0 K Ω Min.				2.0 K Ω Min.			
OUTPUT CIRCUIT								
Max. Load Current	10 A (rms)				10 A (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	125 A							
Max. Off-state Leakage Current	1 mA							
Max. On-state Voltage Drop	1.6 V.							
Min. Load Current	50 mA							
Max. Off-state Slew Rated (dv/dt)	250 V/ μ s							
Operating Frequency Range	47 Hz ~ 63 Hz							

■ GENERAL CHARACTERISTICS

Zero-on or Random-on	Z	R	Z	R
Max. Turn -on Time (60 Hz)	8.3 ms	100 μ s	8.3 ms	100 μ s
Max. Turn-off Time (60 Hz)	8.3 ms			
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)	15 pF Max. (Between Input & Output)			
Operating Temperature	-20°C ~ +80°C			
Storage Temperature	-40°C ~ +100°C			
Heatsink	3.5°C/W (Max. Load Current)			

■ SPECIFICATIONS (DC INPUT CONTROL)

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

DATAS	TYPE	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	15 mA Max.				15 mA Max.				
Min. Turn-off Voltage	1.5 VDC				1 VDC				
Input Impedance	2.0 KΩ Min.				2.0 KΩ Min.				
■ OUTPUT CIRCUIT									
Max. Load Current	25 A (rms)				25 A (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	260 A								
Max. Off-state Leakage Current	7 mA								
Max. On-state Voltage Drop	1.6 V.								
Min. Load Current	100 mA								
Max. Off-state Slew Rated (dv/dt)	250 V/ μs								
Operating Frequency Range	47 Hz ~ 63 Hz								
■ GENERAL CHARACTERISTICS									
Zero-on or Random-on	Z		R		Z		R		
Max. Turn -on Time (60 Hz)	8.3 ms		100 μs		8.3 ms		100 μs		
Max. Turn-off Time (60 Hz)	8.3 ms								
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)	15 pF Max. (Between Input & Output)								
Operating Temperature	-20℃ ~ +80℃								
Storage Temperature	-40℃ ~ +100℃								
Heatsink	1.5℃/W (Max.Load Current)								

■ SPECIFICATIONS (DC INPUT CONTROL)

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

DATAS	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	15 mA Max.				15 mA Max.				
Min. Turn-off Voltage	1.5 VDC				1 VDC				
Input Impedance	2.0 KΩ Min.				2.0 KΩ Min.				
■ OUTPUT CIRCUIT									
Max. Load Current	40 A (rms)				40 A (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	315 A								
Max. Off-state Leakage Current	7 mA								
Max. On-state Voltage Drop	1.8 V.								
Min. Load Current	100 mA								
Max. Off-state Slew Rated (dv/dt)	250 V/ μs								
Operating Frequency Range	47 Hz ~ 63 Hz								
■ GENERAL CHARACTERISTICS									
Zero-on or Random-on	Z		R		Z		R		
Max. Turn -on Time (60 Hz)	8.3 ms		100 μs		8.3 ms		100 μs		
Max. Turn-off Time (60 Hz)	8.3 ms								
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)	15 pF Max. (Between Input & Output)								
Operating Temperature	-20℃ ~ +75℃								
Storage Temperature	-40℃ ~ +100℃								
Heatsink	0.8℃/W (Max.Load Current)								

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 15A(rms) 480V

DATAS	TYPES	ESR500		ESR510	
		4801500	4801501	4801500	4801501
■ INPUT CIRCUIT					
LED Indicate	YES		NO		
Control Voltage Range	4 - 32 VDC		4 - 32 VDC		
Control Current	120 mA Max.		120 mA Max.		
Min. Turn-off Voltage	1.5 VDC		1.5 VDC		
Input Impedance	270Ω Min.		270Ω Min.		
■ OUTPUT CIRCUIT					
Max. Load Current	15 A (rms)		15 A (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	200 A				
Max. Off-state Leakage Current	2 mA				
Max. On-state Voltage Drop	1.6 V.				
Min. Load Current	70 mA				
Max. Off-state Slew Rated (dv/dt)	700 V/μs				
Operating Frequency Range	47 Hz ~ 63 Hz				
■ GENERAL CHARACTERISTICS					
Zero-on or Random-on	Z	R	Z	R	
Max. Turn -on Time (60 Hz)	8.3 ms	100 μs	8.3 ms	100 μs	
Max. Turn-off Time (60 Hz)	8.3 ms				
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)	15 pF Max. (Between Input & Output)				
Operating Temperature	-20℃ ~ +75℃				
Storage Temperature	-40℃ ~ +100℃				
Heatsink	2.1℃/W (Max. Load Current)				

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 25A(rms) 480V

DATAS	TYPES	ESR500		ESR510	
		4802500	4802501	4802500	4802501
■ INPUT CIRCUIT					
LED Indicate	YES		NO		
Control Voltage Range	4 - 32 VDC		4 - 32 VDC		
Control Current	120 mA Max.		120 mA Max.		
Min. Turn-off Voltage	1.5 VDC		1.5 VDC		
Input Impedance	270Ω Min.		270Ω Min.		
■ OUTPUT CIRCUIT					
Max. Load Current	25 A (rms)		25 A (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	250 A				
Max. Off-state Leakage Current	1 mA				
Max. On-state Voltage Drop	1.6 V.				
Min. Load Current	120 mA				
Max. Off-state Slew Rated (dv/dt)	700 V/μs				
Operating Frequency Range	47 Hz ~ 63 Hz				
■ GENERAL CHARACTERISTICS					
Zero-on or Random-on	Z	R	Z	R	
Max. Turn -on Time (60 Hz)	8.3 ms	100 μs	8.3 ms	100 μs	
Max. Turn-off Time (60 Hz)	8.3 ms				
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)	15 pF Max. (Between Input & Output)				
Operating Temperature	-20℃ ~ +75℃				
Storage Temperature	-40℃ ~ +100℃				
Heatsink	1.0℃/W (Max. Load Current)				

■ SPECIFICATIONS (DC INPUT CONTROL)

◆ MAX. LOAD CURRENT: 40A(rms) 480V

DATAS	TYPES	ESR500		ESR510	
		4804000	4804001	4804000	4804001
■ INPUT CIRCUIT					
LED Indicate	YES		NO		
Control Voltage Range	4 - 32 VDC		4 - 32 VDC		
Control Current	120 mA Max.		120 mA Max.		
Min. Turn-off Voltage	1.5 VDC		1.5 VDC		
Input Impedance	270Ω Min.		270Ω Min.		
■ OUTPUT CIRCUIT					
Max. Load Current	40 A (rms)		40 A (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	400 A				
Max. Off-state Leakage Current	1 mA				
Max. On-state Voltage Drop	1.8 V.				
Min. Load Current	120 mA				
Max. Off-state Slew Rated (dv/dt)	900 V/μs				
Operating Frequency Range	47 Hz ~ 63 Hz				
■ GENERAL CHARACTERISTICS					
Zero-on or Random-on	Z	R	Z	R	
Max. Turn -on Time (60 Hz)	8.3 ms	100 μs	8.3 ms	100 μs	
Max. Turn-off Time (60 Hz)	8.3 ms				
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)	15 pF Max. (Between Input & Output)				
Operating Temperature	-20℃ ~ +75℃				
Storage Temperature	-40℃ ~ +100℃				
Heatsink	0.6℃/W (Max. Load Current)				

■ SPECIFICATIONS (AC INPUT CONTROL)

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

DATAS \ TYPES	ESR520		ESR530	
	1201000	2401000	1201000	2401000
■ INPUT CIRCUIT				
LED Indicate	YES		NO	
Control Voltage Range	50 - 280 VAC		50 - 280 VAC	
Control Current	15 mA Max.		15 mA Max.	
Min. Turn-off Voltage	40 VAC		35 VAC	
Input Impedance	106 KΩ Min.		106 KΩ Min.	
■ OUTPUT CIRCUIT				
Max. Load Current	10 A (rms)		10 A (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	125 A			
Max. Off-state Leakage Current	1 mA			
Max. On-state Voltage Drop	1.6 V			
Min. Load Current	50 mA			
Max. Off-state Slew Rated (dv/dt)	250 V/ μs			
Operating Frequency Range	47 Hz ~ 63 Hz			
■ GENERAL CHARACTERISTICS				
Zero-on or Random-on	Z		Z	
Max. Turn -on Time (60 Hz)	10 ms		10ms	
Max. Turn-off Time (60 Hz)	20 ms			
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)	15 pF Max. (Between Input & Output)			
Operating Temperature	-20℃ ~ +80℃			
Storage Temperature	-40℃ ~ +100℃			
Heatsink	3.5℃/W(Max.Load Current)			

■ SPECIFICATIONS (AC INPUT CONTROL)

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

DATAS \ TYPES	ESR520		ESR530	
	1202500	2402500	1202500	2402500
■ INPUT CIRCUIT				
LED Indicate	YES		NO	
Control Voltage Range	50 - 280 VAC		50 - 280 VAC	
Control Current	15 mA Max.		15 mA Max.	
Min. Turn-off Voltage	40 VAC		35 VAC	
Input Impedance	106 KΩ Min.		106 KΩ Min.	
■ OUTPUT CIRCUIT				
Max. Load Current	25 A (rms)		25 A (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	260 A			
Max. Off-state Leakage Current	7 mA			
Max. On-state Voltage Drop	1.6 V			
Min. Load Current	100 mA			
Max. Off-state Slew Rated (dv/dt)	250 V/ μs			
Operating Frequency Range	47 Hz ~ 63 Hz			
■ GENERAL CHARACTERISTICS				
Zero-on or Random-on	Z		Z	
Max. Turn -on Time (60 Hz)	10 ms		10 ms	
Max. Turn-off Time (60 Hz)	20 ms			
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)	15 pF Max. (Between Input & Output)			
Operating Temperature	-20℃ ~ +80℃			
Storage Temperature	-40℃ ~ +100℃			
Heatsink	1.5℃/W(Max.Load Current)			

■ SPECIFICATIONS (AC INPUT CONTROL)

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

DATAS \ TYPES	ESR520		ESR530	
	1204000	2404000	1204000	2404000
■ INPUT CIRCUIT				
LED Indicate	YES		NO	
Control Voltage Range	50 - 280 VAC		50 - 280 VAC	
Control Current	15 mA Max.		15 mA Max.	
Min. Turn-off Voltage	40 VAC		35 VAC	
Input Impedance	106 KΩ Min.		106 KΩ Min.	
■ OUTPUT CIRCUIT				
Max. Load Current	40 A (rms)		40 A (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	315 A			
Max. Off-state Leakage Current	7 mA			
Max. On-state Voltage Drop	1.8 V			
Min. Load Current	100 mA			
Max. Off-state Slew Rated (dv/dt)	250 V/ μs			
Operating Frequency Range	47 Hz ~ 63 Hz			
■ GENERAL CHARACTERISTICS				
Zero-on or Random-on	Z		Z	
Max. Turn -on Time (60 Hz)	10ms		10 ms	
Max. Turn-off Time (60 Hz)	20 ms			
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)	15 pF Max. (Between Input & Output)			
Operating Temperature	-20℃ ~ +75℃			
Storage Temperature	-40℃ ~ +100℃			
Heatsink	0.8℃/W(Max.Load Current)			