

EPR MOS RELAY (6PIN)

1. FEATURES

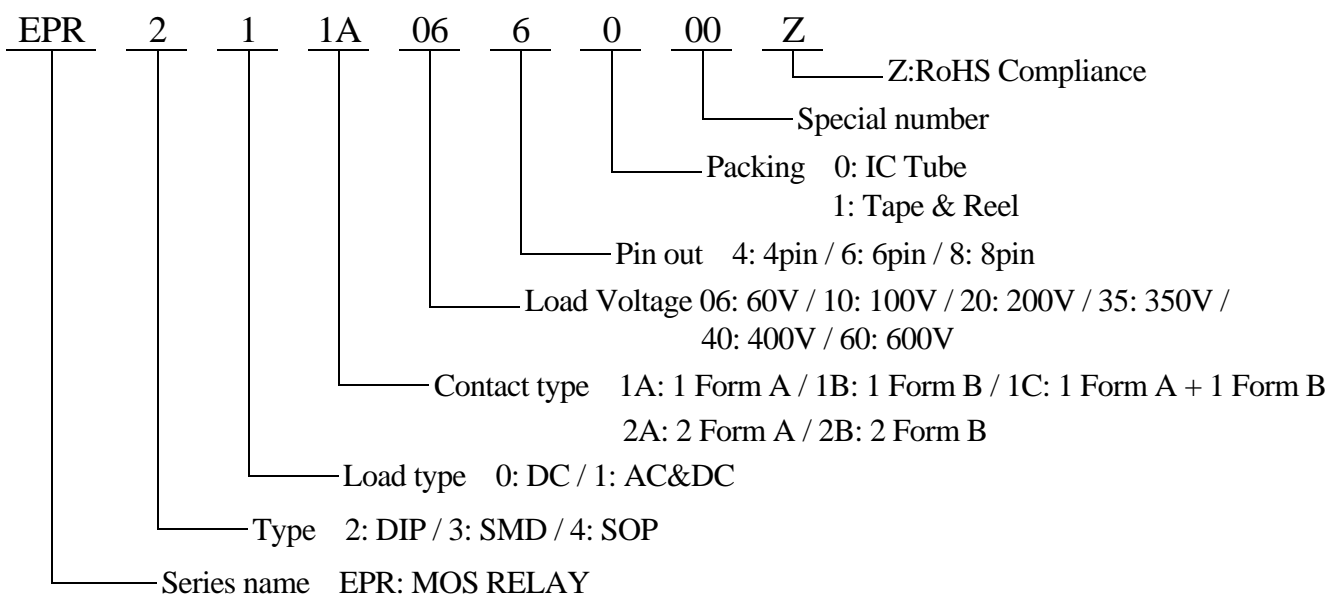
- 1.1 No EMI/RFI Generation
- 1.2 High reliability
- 1.3 No moving parts
- 1.4 Low drive power requirement (TTL/CMOS Compatible)
- 1.5 Low On-state Resistance
- 1.6 3750V isolation input/output (1500V isolation for SO-package)
- 1.7 Arc-free with no snubbing circuits
- 1.8 Machine insertable or wave solderable



2. APPLICATION

- 2.1 Telecommunications
- 2.2 Instrumentation
- 2.3 Medical equipment
- 2.4 Security
- 2.5 Industrial control

3. PART NUMBERING SYSTEM



4. SPECIFICATION

Part Number (6PIN)		Marking	PACKING	Contact Form
EPR211A066000(Z)	DIP / 60VAC&DC	EPR61A06T	50 pcs/Tube	1A
EPR311A066000(Z)	SMD / 60VAC&DC	EPR61A06M	50 pcs/Tube	
EPR311A066100(Z)	SMD / 60VAC&DC	EPR61A06M	1000 pcs/Tape & reel	
EPR411A066000(Z)	SOP / 60VAC&DC	EPR61A06S	72 pcs/Tube	
EPR411A066100(Z)	SOP / 60VAC&DC	EPR61A06S	2000 pcs/Tape & reel	

Electrical characteristics (Ambient temperature: 25°C)

ITEM		Symbol	MIN.	TYP	MAX	UNIT	NOTE
Input	Forward voltage	V _F	1.0		1.4	V	IF=10mA
	Reverse voltage	V _R			5	V	IR=10μA
	Control current	I _{Fopr}	5		50	mA	
Output	Load voltage (AC peak or DC)	V _L	60			V	
	Continuous Rated Load Current	SOP	I _L		350	mA	IF=10mA
		DIP/SMD		400			
	Peak current	SOP	I _{Lpeak}		600	mA	10ms
		DIP/SMD		700			
	On-state resistance	R _{ON}		1.0	1.4	Ohm	IF=10mA,IL=rating
	Off-state Leakage current	I _{LK}			1	μA	IF=0mA,VL=rating
	Turn-On Time	T _{ON}		0.2	0.5	ms	IF=10mA,VL=rating, IL=rating
Turn-Off Time	T _{OFF}		0.03	0.3	ms		
Output Capacitance	C _{OUT}		150		pF	f=1MHz	
Input/ Output	I/O Capacitance	C _{I/O}		1		pF	f=1MHz
	I/O Isolation voltage	SOP	V _{I/O}	1500		VAC	R.H.≤ 60% 1min
		DIP/SMD		3750			
I/O Isolation resistance	R _{I/O}	5			GΩ	DC=500V delay 2sec	
Temperature limits	Operating	T _{OP}	-40°C to +85°C (-40°F to +185°F)				
	Storage	T _{STG}	-40°C to +100°C (-40°F to +212°F)				

S P E C I F I C A T I O N

Edition

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Part Number (6PIN)		Marking	PACKING	Contact Form
EPR211A206000(Z)	DIP / 200VAC&DC	EPR61A20T	50 pcs/Tube	1A
EPR311A206000(Z)	SMD / 200VAC&DC	EPR61A20M	50 pcs/Tube	
EPR311A206100(Z)	SMD / 200VAC&DC	EPR61A20M	1000 pcs/Tape & reel	
EPR411A206000(Z)	SOP / 200VAC&DC	EPR61A20S	72 pcs/Tube	
EPR411A206100(Z)	SOP / 200VAC&DC	EPR61A20S	2000 pcs/Tape & reel	

Electrical characteristics (Ambient temperature: 25°C)

ITEM		Symbol	MIN.	TYP	MAX	UNIT	NOTE
Input	Forward voltage	V _F	1.0		1.4	V	I _F =10mA
	Reverse voltage	V _R			5	V	I _R =10μA
	Control current	I _{Fopr}	5		50	mA	
Output	Load voltage (AC peak or DC)	V _L	200			V	
	Continuous Rated Load Current	SOP	I _L		150	mA	I _F =10mA
		DIP/SMD		200			
	Peak current	SOP	I _{Lpeak}		300	mA	10ms
		DIP/SMD		400			
	On-state resistance	R _{ON}		6	10	Ohm	I _F =10mA, I _L =rating
	Off-state Leakage current	I _{LK}			1	μA	I _F =0mA, V _L =rating
	Turn-On Time	T _{ON}		0.2	0.5	ms	I _F =10mA, V _L =rating, I _L =rating
Turn-Off Time	T _{OFF}		0.03	0.3	ms		
Output Capacitance	C _{OUT}		100		pF	f=1MHz	
Input/ Output	I/O Capacitance	C _{I/O}		1		pF	f=1MHz
	I/O Isolation voltage	SOP	V _{I/O}	1500		VAC	R.H. ≤ 60% 1min
		DIP/SMD		3750			
I/O Isolation resistance	R _{I/O}	5			GΩ	DC=500V delay 2sec	
Temperature limits	Operating	T _{OP}	-40°C to +85°C (-40°F to +185°F)				
	Storage	T _{STG}	-40°C to +100°C (-40°F to +212°F)				

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Part Number (6PIN)		Marking	PACKING	Contact Form
EPR211A406000(Z)	DIP / 400VAC&DC	EPR61A40T	50 pcs/Tube	1A
EPR311A406000(Z)	SMD / 400VAC&DC	EPR61A40M	50 pcs/Tube	
EPR311A406100(Z)	SMD / 400VAC&DC	EPR61A40M	1000 pcs/Tape & reel	
EPR411A406000(Z)	SOP / 400VAC&DC	EPR61A40S	72 pcs/Tube	
EPR411A406100(Z)	SOP / 400VAC&DC	EPR61A40S	2000 pcs/Tape & reel	

Electrical characteristics (Ambient temperature: 25°C)

ITEM		Symbol	MIN.	TYP	MAX	UNIT	NOTE
Input	Forward voltage	V _F	1.0		1.4	V	I _F =10mA
	Reverse voltage	V _R			5	V	I _R =10μA
	Control current	I _{Fopr}	5		50	mA	
Output	Load voltage (AC peak or DC)	V _L	400			V	
	Continuous Rated Load Current	SOP	I _L		100	mA	I _F =10mA
		DIP/SMD		130			
	Peak current	SOP	I _{Lpeak}		250	mA	10ms
		DIP/SMD		300			
	On-state resistance	R _{ON}		20	30	Ohm	I _F =10mA, I _L =rating
	Off-state Leakage current	I _{LK}			1	μA	I _F =0mA, V _L =rating
	Turn-On Time	T _{ON}		0.2	0.5	ms	I _F =10mA, V _L =rating, I _L =rating
Turn-Off Time	T _{OFF}		0.03	0.3	ms		
Output Capacitance	C _{OUT}		70		pF	f=1MHz	
Input/ Output	I/O Capacitance	C _{I/O}		1		pF	f=1MHz
	I/O Isolation voltage	SOP	V _{I/O}	1500		VAC	R.H. ≤ 60% 1min
		DIP/SMD		3750			
I/O Isolation resistance	R _{I/O}	5			GΩ	DC=500V delay 2sec	
Temperature limits	Operating	T _{OP}	-40°C to +85°C (-40°F to +185°F)				
	Storage	T _{STG}	-40°C to +100°C (-40°F to +212°F)				

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Edition

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Part Number (6PIN)		Marking	PACKING	Contact Form
EPR211B206000(Z)	DIP / 200VAC&DC	EPR61B20T	50 pcs/Tube	1B
EPR311B206000(Z)	SMD / 200VAC&DC	EPR61B20M	50 pcs/Tube	
EPR311B206100(Z)	SMD / 200VAC&DC	EPR61B20M	1000 pcs/Tape & reel	
EPR411B206000(Z)	SOP / 200VAC&DC	EPR61B20S	72 pcs/Tube	
EPR411B206100(Z)	SOP / 200VAC&DC	EPR61B20S	2000 pcs/Tape & reel	

Electrical characteristics (Ambient temperature: 25°C)

ITEM		Symbol	MIN.	TYP	MAX	UNIT	NOTE
Input	Forward voltage	V _F	1.0		1.4	V	I _F =10mA
	Reverse voltage	V _R			5	V	I _R =10μA
	Control current	I _{Fopr}	5		50	mA	
Output	Load voltage (AC peak or DC)	V _L	200			V	
	Continuous Rated Load Current	SOP	I _L		80	mA	I _F =0mA
		DIP/SMD		100			
	Peak current	SOP	I _{Lpeak}		200	mA	10ms
		DIP/SMD		250			
	On-state resistance	R _{ON}		17	30	Ohm	I _F =0mA, I _L =rating
	Off-state Leakage current	I _{LK}			10	μA	I _F =5mA, V _L =rating
	Turn-On Time	T _{ON}		0.03	0.5	ms	I _F =10mA, V _L =rating, I _L =rating
Turn-Off Time	T _{OFF}		0.4	1.0	ms		
Output Capacitance	C _{OUT}		200		pF	f=1MHz	
Input/ Output	I/O Capacitance	C _{I/O}		1		pF	f=1MHz
	I/O Isolation voltage	SOP	V _{I/O}	1500		VAC	R.H. ≤ 60% 1min
		DIP/SMD		3750			
I/O Isolation resistance	R _{I/O}	5			GΩ	DC=500V delay 2sec	
Temperature limits	Operating	T _{OP}	-40°C to +85°C (-40°F to +185°F)				
	Storage	T _{STG}	-40°C to +100°C (-40°F to +212°F)				

S P E C I F I C A T I O N

Edition

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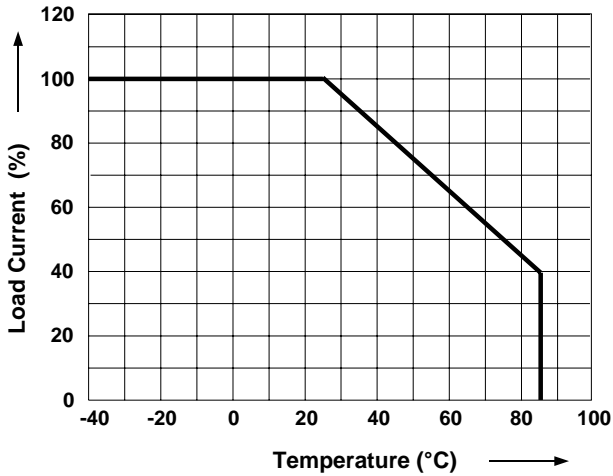
Part Number (6PIN)	Marking	PACKING	Contact Form
EPR211B406000(Z) DIP / 400VAC&DC	EPR61B40T	50 pcs/Tube	1B
EPR311B406000(Z) SMD / 400VAC&DC	EPR61B40M	50 pcs/Tube	
EPR311B406100(Z) SMD / 400VAC&DC	EPR61B40M	1000 pcs/Tape & reel	
EPR411B406000(Z) SOP / 400VAC&DC	EPR61B40S	72 pcs/Tube	
EPR411B406100(Z) SOP / 400VAC&DC	EPR61B40S	2000 pcs/Tape & reel	

Electrical characteristics (Ambient temperature: 25°C)

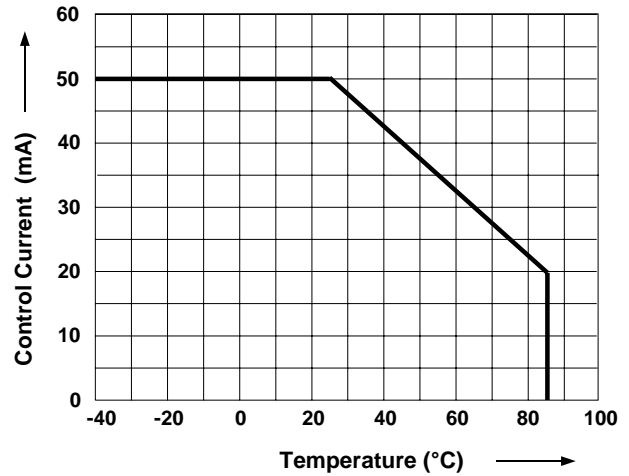
ITEM		Symbol	MIN.	TYP	MAX	UNIT	NOTE
Input	Forward voltage	V _F	1.0		1.4	V	I _F =10mA
	Reverse voltage	V _R			5	V	I _R =10μA
	Control current	I _{Fopr}	5		50	mA	
Output	Load voltage (AC peak or DC)	V _L	400			V	
	Continuous Rated Load Current	SOP	I _L		80	mA	I _F =0mA
		DIP/SMD		100			
	Peak current	SOP	I _{Lpeak}		200	mA	10ms
		DIP/SMD		250			
	On-state resistance	R _{ON}		25	50	Ohm	I _F =0mA, I _L =rating
	Off-state Leakage current	I _{LK}			10	μA	I _F =5mA, V _L =rating
	Turn-On Time	T _{ON}		0.03	0.5	ms	I _F =10mA, V _L =rating, I _L =rating
Turn-Off Time	T _{OFF}		0.4	1.0	ms		
Output Capacitance	C _{OUT}		200		pF	f=1MHz	
Input/ Output	I/O Capacitance	C _{I/O}		1		pF	f=1MHz
	I/O Isolation voltage	SOP	V _{I/O}	1500		VAC	R.H. ≤ 60% 1min
		DIP/SMD		3750			
I/O Isolation resistance	R _{I/O}	5			GΩ	DC=500V delay 2sec	
Temperature limits	Operating	T _{OP}	-40°C to +85°C (-40°F to +185°F)				
	Storage	T _{STG}	-40°C to +100°C (-40°F to +212°F)				

LIMIT CONDITIONS

Load Current vs. Temperature



Control Current vs. Temperature



RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward Current	I _F	5	10	25	mA
Operating Temperature	T _{opr}	-20		65	°C

5. PACKING

5.1 PACKING METHOD

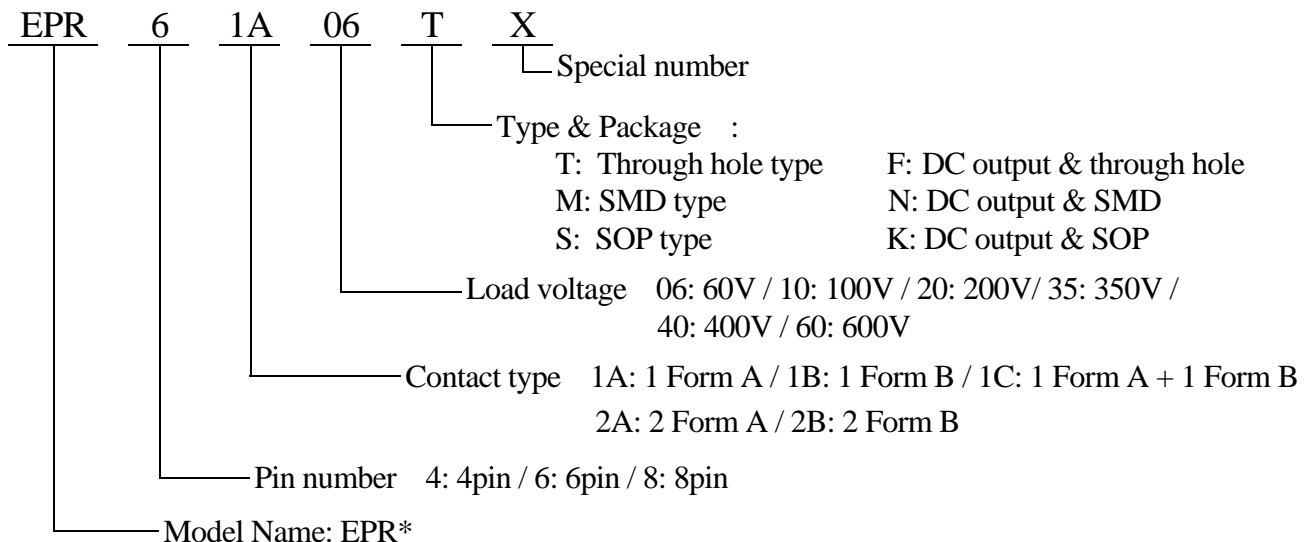
All relays are packed into IC tubes as an inner packing unit, and ten IC tubes bundled together with rubber bands.

5.2 Relays may also be packed using tape & reel methods.

5.3 INFORMATION ON LABEL (stuck to each bundle of IC tubes).

- | | |
|-----------------|-------------------------|
| (1) DESCRIPTION | (5) ECE MARK |
| (2) LOT NO. | (6) QC STAMP |
| (3) QUANTITY. | (7) DATE. |
| (4) TESTER NO. | (8) MANUFACTURERS NAME. |

6. MARKING SYSTEM



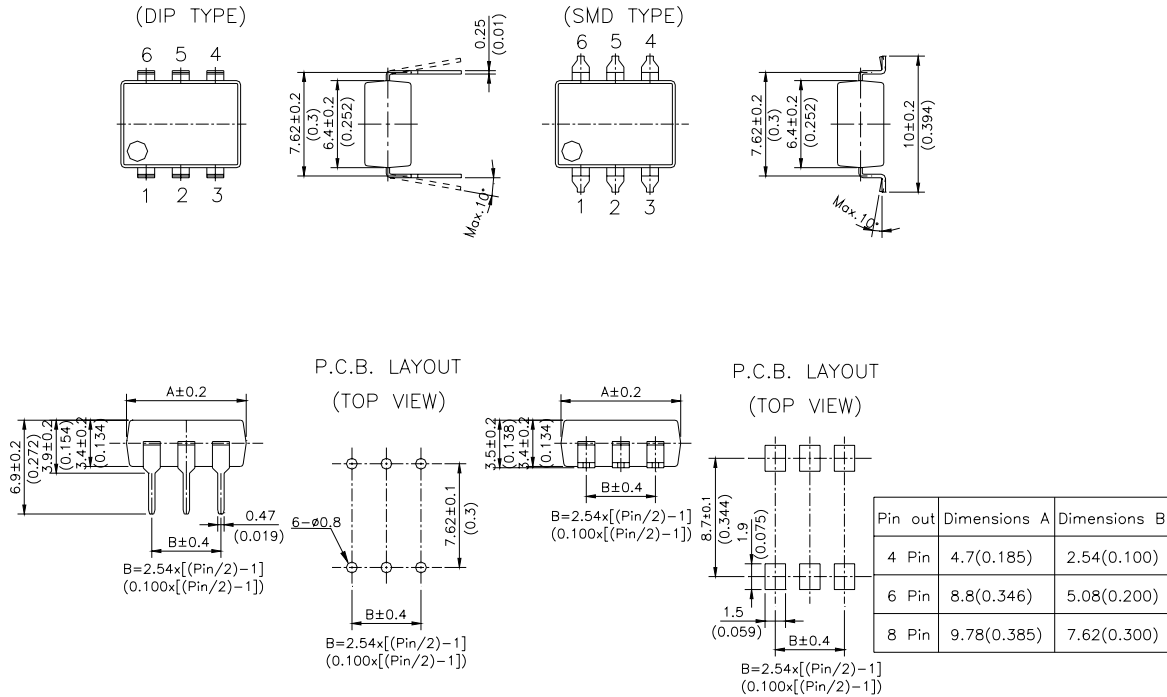
*4 pin products without "EPR" mark.

7. CIRCUIT DIAGRAM & APPLICATION

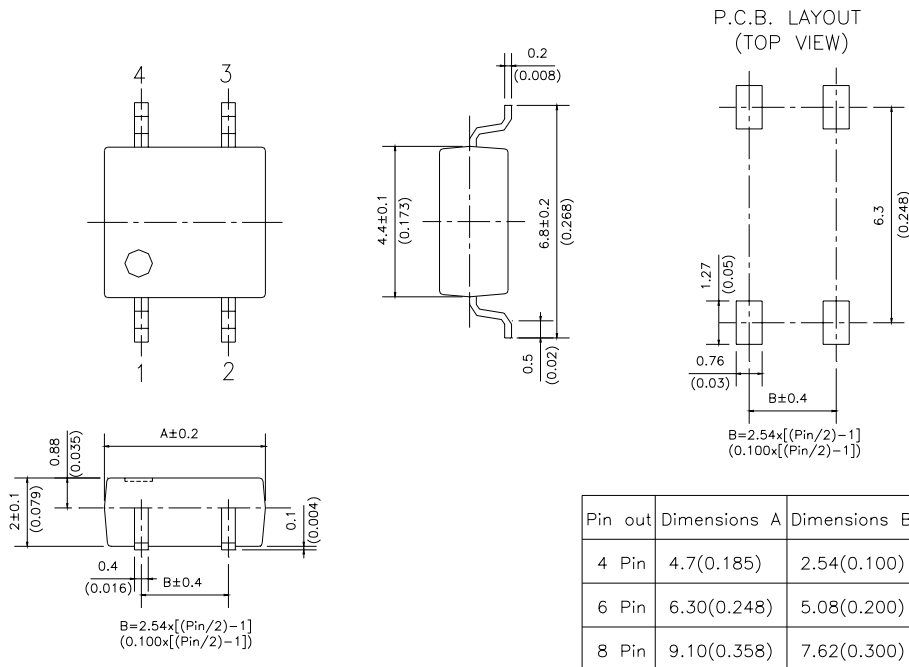
Circuit diagram (6 PIN)	Load type	Configuration	Application
<p>Form A</p>	AC/DC	1	
<p>Form B</p>	DC	2	
	DC	3	

8. DRAWINGS

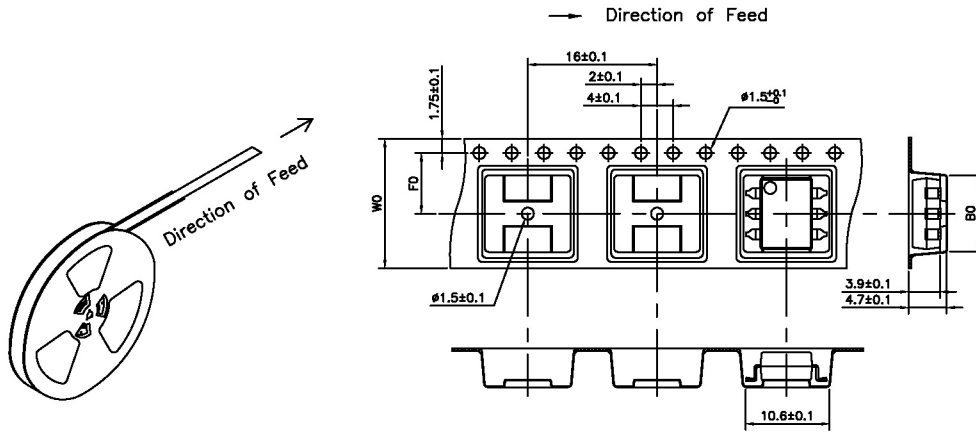
EPR/EPC/EPT/EPV-DIP/SMD SERIES DIMENSIONS Unit:mm(inch)



EPR/EPC/EPT/EPV-SOP SERIES DIMENSIONS Unit:mm(inch)

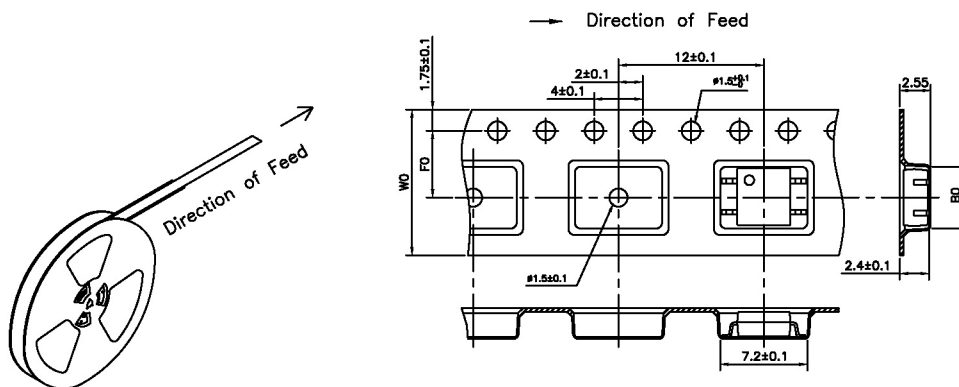


EPR-SMD REEL (Dimensions in mm)



TYPE	B0±0.1	FO±0.1	W0±0.3	15° REEL/PCS
4P	5.3	7.5	16	1000
6P	9.4	7.5	16	1000
8P	10.3	11.5	24	1000

EPR-SOP REEL (Dimensions in mm)



TYPE	B0±0.1	FO±0.1	W0±0.3	13° REEL/PCS
4P	5.1	5.5	12	2000
6P	6.7	7.5	16	2000
8P	9.6	7.5	16	2000