

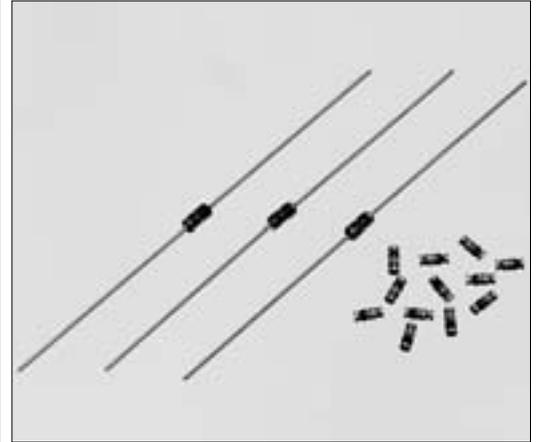
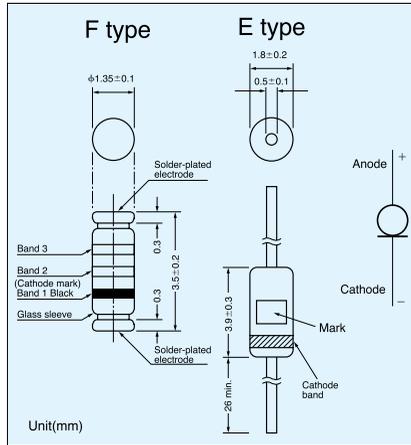
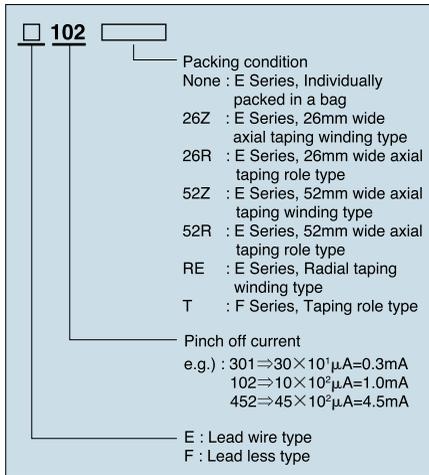
CURRENT REGULATIVE DIODE

CRD

CRD is a diode which supplies constant current to an electric circuit, even when power supply voltage fluctuations or load impedance fluctuations occur.

CRD is used for current stabilization and current limiting.

Part number



Specifications

Part No.	Pinch-off current*1		Limiting current*2		Dynamic impedance Z _r (MΩ)	Limiting current ratio I _{100V} /I _p *I _{50V} /I _p	Temperature coefficient (%/°C)	Indication		
	lead less	with lead	Test Voltage	I _p (mA)				V _k (V)	I _k (mA)	F type
								Band 2	Band 3	Type
F-101L E-101L			0.01~0.06	0.4	8.00	1.1max.	+2.10~+0.10		White	1L
F-101 E-101			0.05~0.21	0.5	6.00		+2.10~+0.10		Pink	01
F-301 E-301			0.20~0.42	0.8	4.00		+0.40~-0.20	Light blue	Orange	03
F-501 E-501			0.40~0.63	1.1	2.00		+0.15~-0.25		Yellow green	05
F-701 E-701			0.60~0.92	1.4	1.00		0.00~-0.32		Blue	07
F-102 E-102			0.88~1.32	1.7	0.65		-0.10~-0.37		Pink	10
F-152 E-152			1.28~1.72	2.0	0.40		-0.13~-0.40		Orange	15
F-202 E-202			1.68~2.32	2.3	0.25		-0.15~-0.42		Yellow green	20
F-272 E-272			2.28~3.10	2.7	0.15		-0.18~-0.45		Light blue	27
F-352 E-352			3.00~4.10	3.2	0.10		-0.20~-0.47	Yellow green	Blue	35
F-452 E-452			3.90~5.10	3.7	0.07	-0.22~-0.50		Purple	45	
F-562 E-562			5.00~6.50	4.5	0.04	-0.25~-0.53		White	56	
F-822 E-822			6.56~9.84	3.1	0.32	-0.25~-0.45		Yellow	82	
F-103 E-103			8.00~12.0	3.5	0.17	-0.25~-0.45	*1.0max.		Pink	10
F-123 E-123			9.60~14.4	3.8	0.08	-0.25~-0.45		Orange	White	12
F-153 E-153			12.0~18.0	4.3	0.03	-0.25~-0.45			Light blue	15

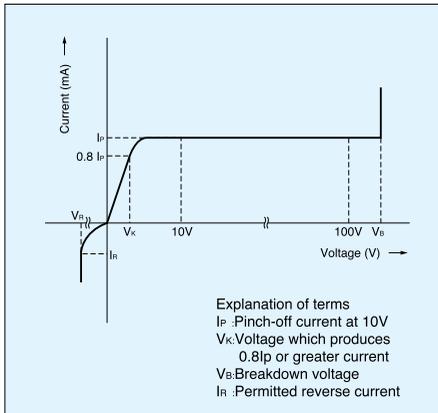
*1,*2 Pinch-off current limiting current are measured by impulse wave at 25°C

*3 Z_r is minimum AC impedance when small AC signal voltage of 10KHz is added to 25 V_{DC} bias. Z_r is used as the reference value.

*4 Temperature coefficient is measured between 25°C and 50°C.

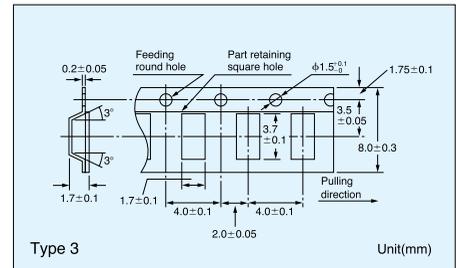
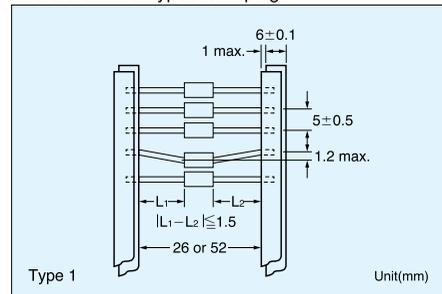
*I_{50V}/I_p

Basic characteristics



Taping

There are three Types for taping.



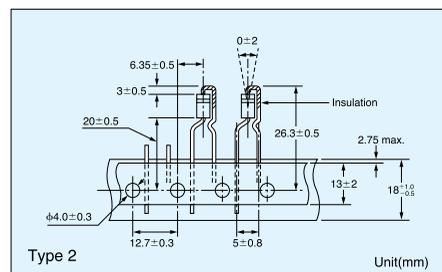
*In principal elements are set with cathode side on the round hole side.

Maximum ratings

	E type	F type
Rating power	300mW	400mW
Thermal resistance	300°C/W	150°C/W
Reverse current	50mA	
Operating temp	-30°C~150°C	

Maximum rating voltage

Part No.	Voltage	Part No.	Voltage
E101L~E-562	100V	F101L~F-562	100V
E-822	30	F-822	50
E-103		F-103	42
E-123		F-123	34
E-153	25	F-153	28



Minimum taping quantity for

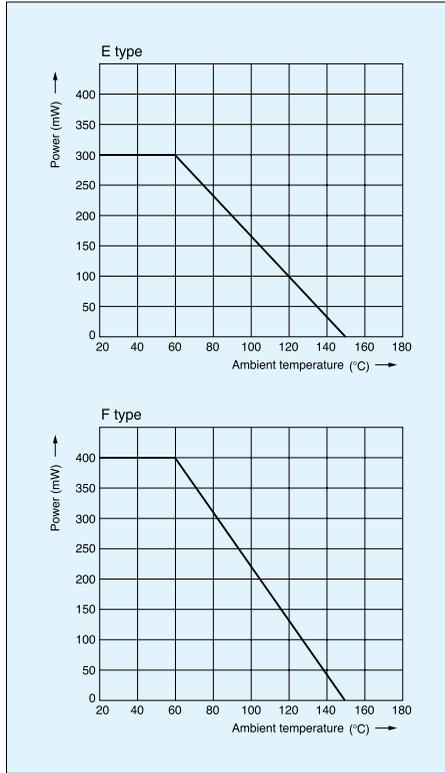
Type 1 Roll.....5000pcs

Box.....2500pcs

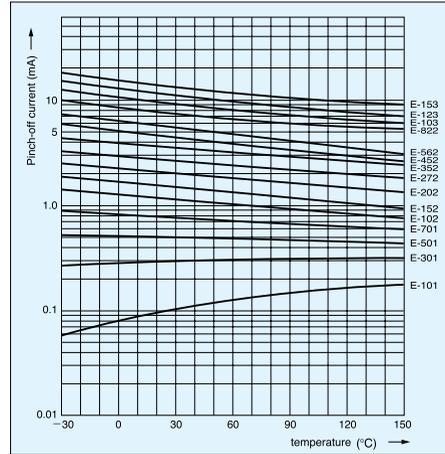
Type 2 4000pcs

Type 3 2500pcs

Power derating



Pinch-off current Temperature

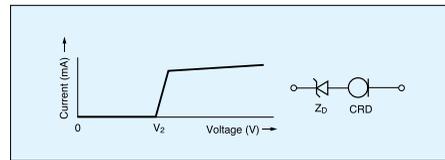


CRD in parallel

The use of CRD in parallel increases their current handling capabilities.

Increasing the voltage range using a zener diode

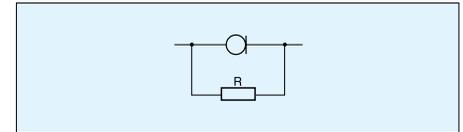
Connecting zener diodes in series with the line ensures that the current is constant in high-voltage area.



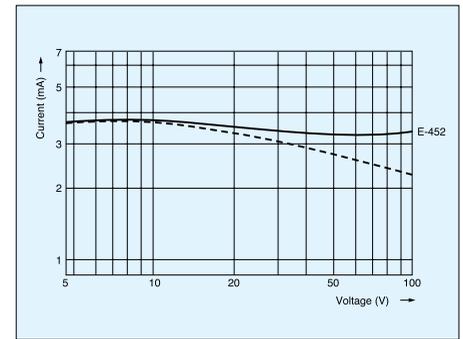
The compensation of current reduction due to self heating

Placing resistors in parallel with CRD can correct any current decrease when the applied voltage increases. The following values are typical for correction resistors.

E-102	1MΩ	E-352	82kΩ
E-152	390kΩ	E-452	56kΩ
E-202	240kΩ	E-562	39kΩ
E-272	120kΩ		



Compensative resistor is not necessary if the current value is less than 1 mA.



Dynamic characteristics (saturation characteristics)

