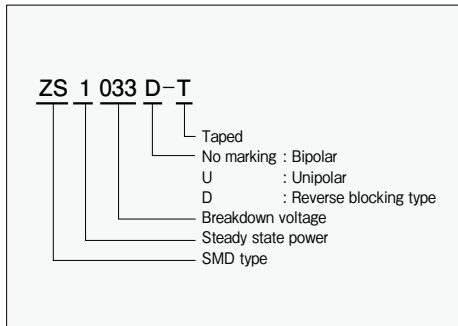


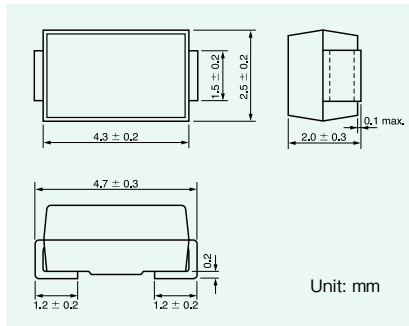
■ VRD voltage regulating diode (= TVS diode)

SMD type VRD

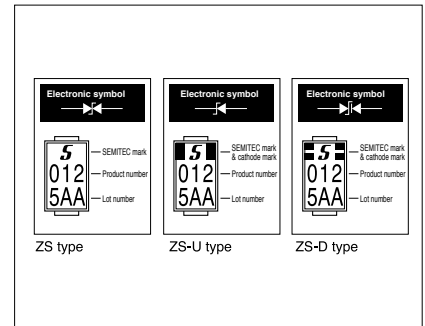
Product number



Dimensions



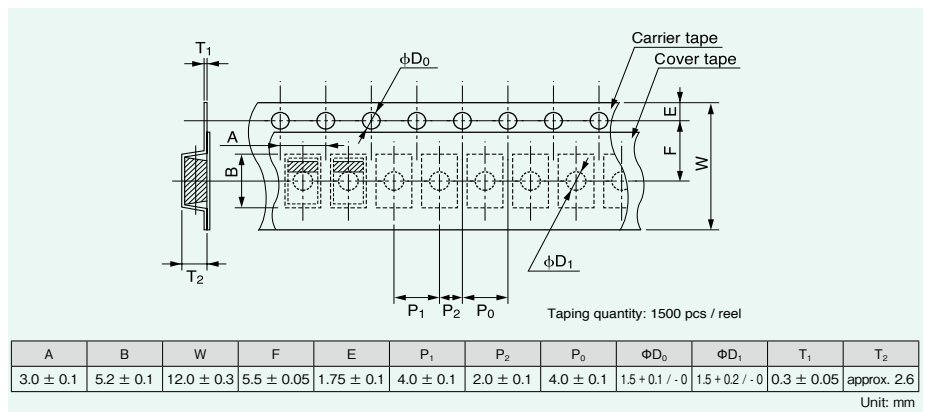
Product marking



General specifications for all types

Item	Rating
Rated average power dissipation	1.0 W
Rated peak impulse power dissipation	300 W (10 / 1000 μ s)
	1200 W (1.2 / 50 μ s)
Storage temp. range	2000 W (8 / 20 μ s)
	- 40 °C to 150 °C

Taping dimensions



Specifications

ZS type

Product number	Stand-off voltage		Stand-by current	Breakdown voltage	Clamping voltage / rated peak impulse current				Temperature coefficient	Capacitance
	V _s	I _s max			V _C max / I _{pp}		25 to 50 °C			
	DC	V _S	I _s = 1 mA	10 / 1000 μ s		8 / 20 μ s		% / °C	pF	
ZS1012	12 (10.8 to 13.2)	9.72	5	10	17.3	17.3	22.4	89.3	0.066	551
ZS1015	15 (13.5 to 16.5)	12.1			22.0	13.6	28.5	70.2	0.075	465
ZS1018	18 (16.2 to 19.8)	14.5			26.5	11.3	34.4	58.1	0.079	376
ZS1022	22 (19.8 to 24.2)	17.8			31.9	9.40	41.4	48.3	0.082	299
ZS1027	27 (24.3 to 29.7)	21.8			39.1	7.67	50.7	39.4	0.085	248
ZS1033	33 (29.7 to 36.3)	26.8			47.7	6.29	61.8	32.4	0.087	198
ZS1039	39 (35.1 to 42.9)	31.6			56.4	5.32	73.1	27.4	0.090	164
ZS1047	47 (42.3 to 51.7)	38.1			67.8	4.42	88.0	22.7	0.092	137

Ta = 25 °C

ZS-U type

Product number	Stand-off voltage		Stand-by current	Breakdown voltage	Clamping voltage / rated peak impulse current				Temperature coefficient	Capacitance
	V _s	I _s max			V _C max / I _{pp}		25 to 50 °C			
	DC	V _S	I _s = 1 mA	10 / 1000 μ s		8 / 20 μ s		% / °C	pF	
ZS1012U	12 (10.8 to 13.2)	9.72	5	10	17.3	17.3	22.4	89.3	0.066	1,102
ZS1015U	15 (13.5 to 16.5)	12.1			22.0	13.6	28.5	70.2	0.075	929
ZS1018U	18 (16.2 to 19.8)	14.5			26.5	11.3	34.4	58.1	0.079	751
ZS1022U	22 (19.8 to 24.2)	17.8			31.9	9.40	41.4	48.3	0.082	598
ZS1027U	27 (24.3 to 29.7)	21.8			39.1	7.67	50.7	39.4	0.085	497
ZS1033U	33 (29.7 to 36.3)	26.8			47.7	6.29	61.8	32.4	0.087	395
ZS1039U	39 (35.1 to 42.9)	31.6			56.4	5.32	73.1	27.4	0.090	328
ZS1047U	47 (42.3 to 51.7)	38.1			67.8	4.42	88.0	22.7	0.092	274

Ta = 25 °C

ZS-D type

Product number	Stand-off voltage		Stand-by current	Breakdown voltage	Clamping voltage / rated peak impulse current				Temperature coefficient	Capacitance
	V _s	I _s max			V _C max / I _{pp}		25 to 50 °C			
	DC	V _S	I _s = 1 mA	10 / 1000 μ s		8 / 20 μ s		% / °C	pF	
ZS1012D	12 (10.8 to 13.2)	9.72	5	10	17.3	17.3	22.4	89.3	0.066	30.2
ZS1015D	15 (13.5 to 16.5)	12.1			22.0	13.6	28.5	70.2	0.075	29.1
ZS1018D	18 (16.2 to 19.8)	14.5			26.5	11.3	34.4	58.1	0.079	28.2
ZS1022D	22 (19.8 to 24.2)	17.8			31.9	9.40	41.4	48.3	0.082	27.3
ZS1027D	27 (24.3 to 29.7)	21.8			39.1	7.67	50.7	39.4	0.085	26.4
ZS1033D	33 (29.7 to 36.3)	26.8			47.7	6.29	61.8	32.4	0.087	25.5
ZS1039D	39 (35.1 to 42.9)	31.6			56.4	5.32	73.1	27.4	0.090	24.8
ZS1047D	47 (42.3 to 51.7)	38.1			67.8	4.42	88.0	22.7	0.092	24.0

Ta = 25 °C

• Reverse voltage: 200 V DC