Leiditech

SDP5024G

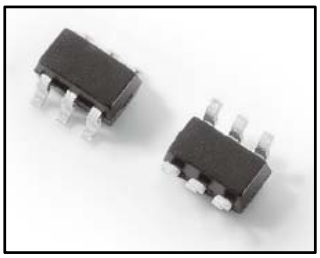
Integrated Thyristor Surge Protector

DESCRIPTION:

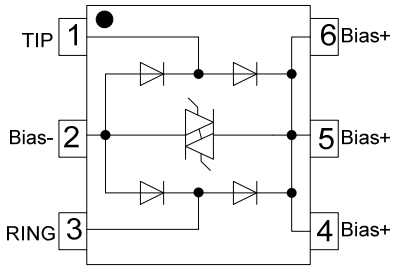
The integrated thyristor series provide overvoltage protection for applications such as VDSL2, ADSL2, and ADSL2+ with minimal effect on data signals. This silicon design innovation results in a capacitive loading characteristic that is compatible with these high bandwidth applications. The devices is also bi-directional between pin1 to pin3. All electrical parameters and surge ratings apply to forward and reverse polarities. This surface mount SOT23-6 package provides a surge capability that exceeds most worldwide standards and recommendations for lightning surge withstand capability of tertiary protectors.

FEATURES:

- ✧ Compatible with VDSL2、ADSL2
- ✧ Low capacitance and leakage current
- ✧ Balanced overvoltage protection
- ✧ Low clamping voltage
- ✧ Response time under 500ns
- ✧ Low insertion loss
- ✧ Low distortion



SOT23-6



Schematic & PIN Configuration

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD)±15kV (air), ±8kV (contact)
- ✧ IEC61000-4-4 (EFT)40A(5/50ns)
- ✧ IEC61000-4-5 (Lightning) 35A (8/20μs)

MECHANICAL CHARACTERISTICS

- ✧ JEDEC SOT23-6 package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Quantity per reel: 3, 000pcs
- ✧ Lead finish: lead free
- ✧ Marking code: J24G

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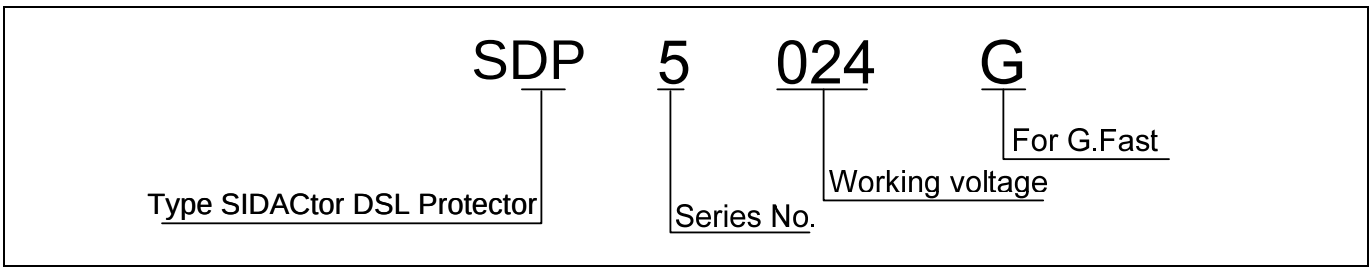
ABSOLUTE MAXIMUM RATINGS(between pin1 and pin3, T_A=25℃, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Non-repetitive impulse current on 8/20 μs waveform	I_{PP}	35	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 15 +/- 8	kV
Lead soldering temperature	T_L	260 (10 sec.)	℃
Operating junction temperature range	T_J	-40 to +150	℃
Storage temperature range	T_{STG}	-65 to +150	℃

ELECTRICAL CHARACTERISTICS(between pin1 and pin3, T_A=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Stand-off voltage	V_{DRM}	I_{DRM}=100nA			24	V
Off-state current	I_{DRM}	V_{DRM}= 24V			100	nA
Switching voltage	V_S	100KV/s		30		V
Switching current	I_S		10			mA
Holding current	I_H			40		mA
On-state voltage	V_T	I_T=1A		1.5		V
Clamping voltage	V_C	I_{PP} =35A, tp =8/20μs		32	35	V
Off-state capacitance	C_O	F=1MHz, 2V		1.1	3.0	pF
Delta Co	ΔC_O	Line bias=1V to V_{DRM}			0.5	pF

ORDERING INFORMATION



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RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25℃, unless otherwise noted)

FIG.1:V- I curve characteristics
(Bi-directional)

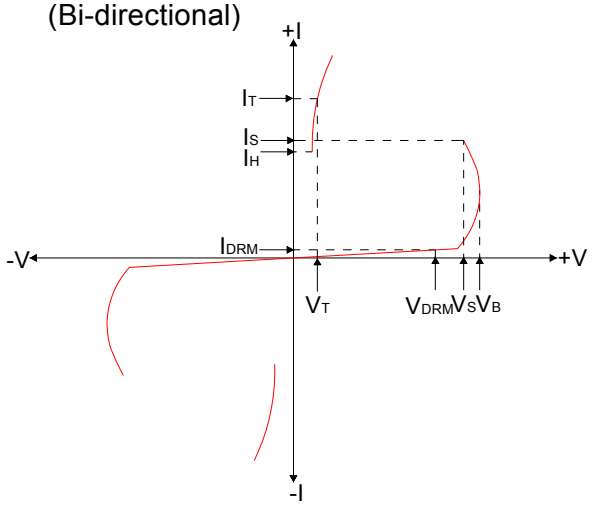


FIG.2: Typical capacitance against line voltage
(without external bias)

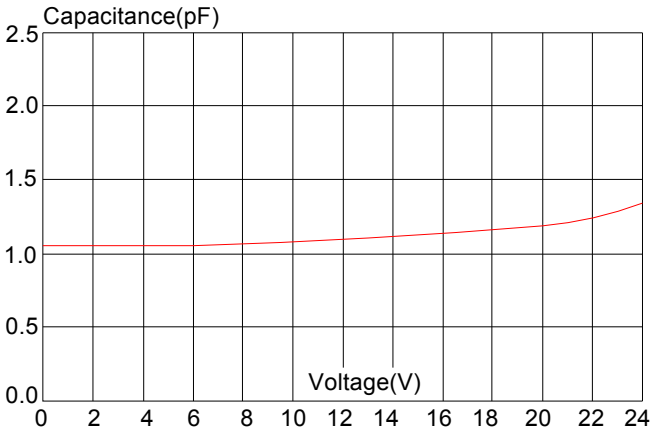


FIG.3: Normalized Vs change vs.junction temperature

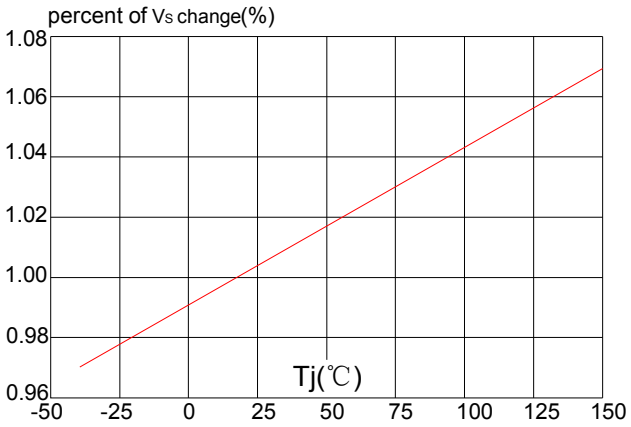
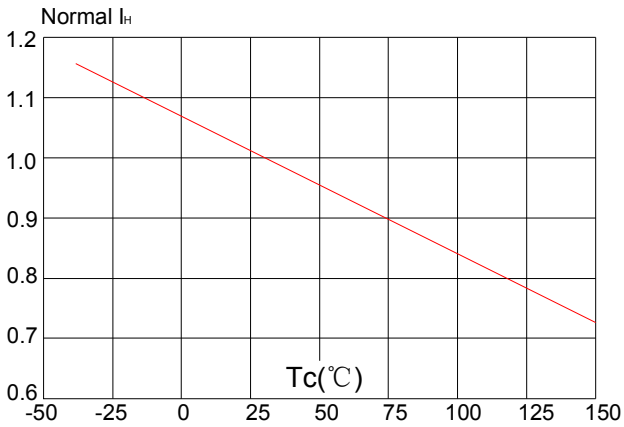
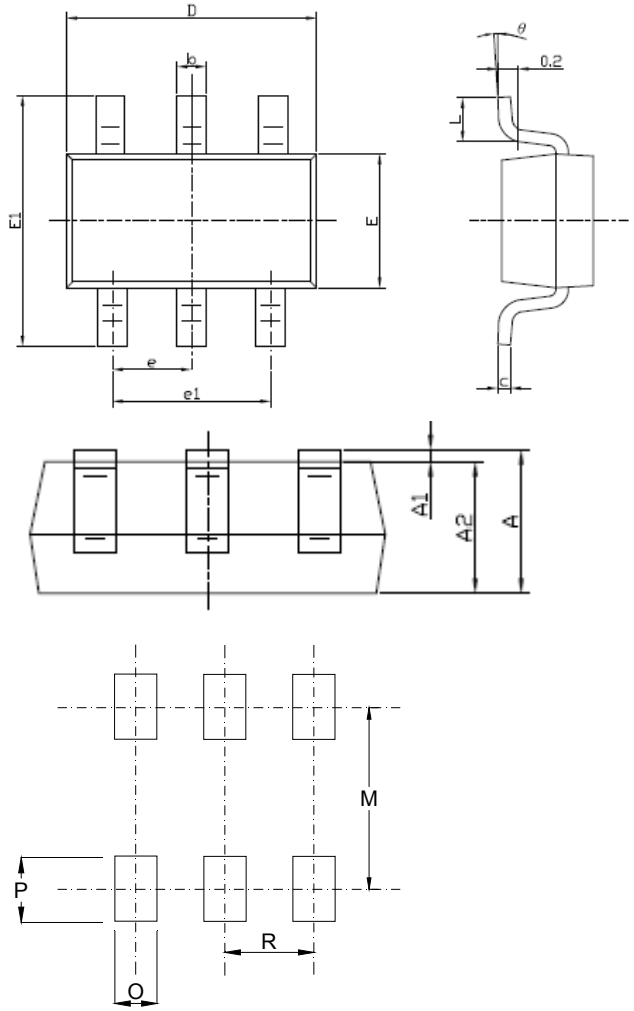


FIG.4: Normalized holding current vs. case temperature



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PACKAGE MECHANICAL DATA

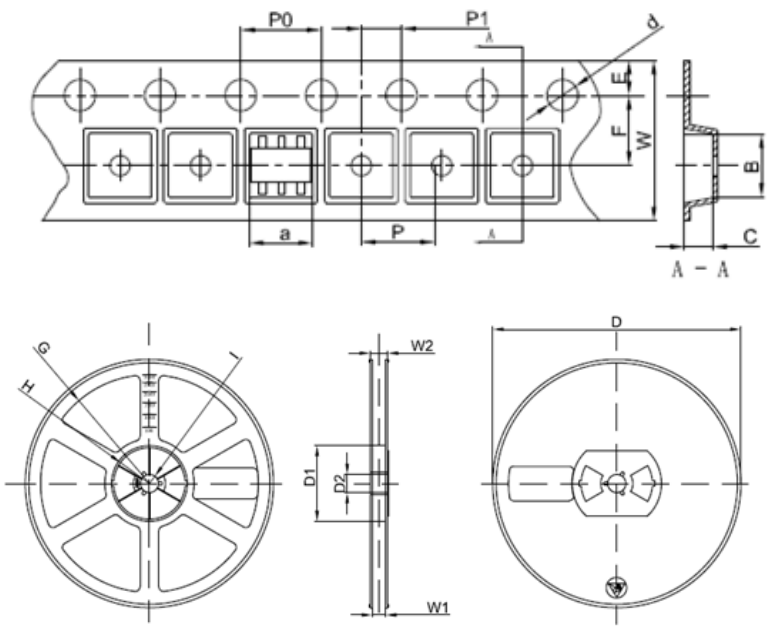


Recommended solder pad layout

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.05	1.25	0.041	0.049
A1	0.00	0.10	0.000	0.004
A2	1.05	1.15	0.041	0.045
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.85	3.05	0.112	0.120
E	1.50	1.70	0.059	0.067
E1	2.65	2.95	0.104	0.116
e	0.95(BSC)		0.037(BSC)	
e1	1.80	2.00	0.071	0.079
L	0.30	0.60	0.012	0.024
Θ	0°	8°	0°	8°
M	-	2.59	-	0.102
O	-	0.69	-	0.027
P	-	0.99	-	0.039
R	-	0.95	-	0.038

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TAPE AND REEL SPECIFICATION-SOT23-6



Symbol	Millimeter	Inches
	Typ.	Typ.
a	3.17	0.125
B	3.23	0.127
C	1.37	0.054
d	Φ1.55	Φ0.061
E	1.75	0.069
F	3.50	0.138
P0	4.00	0.157
P	4.00	0.157
P1	2.00	0.079
W	8.00	0.315
D	Φ180	Φ7.087
D1	60.00	2.632
D2	13.00	0.512
G	R78.00	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	13.10	0.516

Packaging Description:

SOT23-6 parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

ORDERING INFORMATION

OUTLINE	PACKAGE TYPE	QUANTITY REEL	DESCIPTION
TAPING	SOT23-6	3,000	7 inch reel pack

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