

SMP30-xxx

TELECOM EQUIPMENT PROTECTION: TRISIL™

FEATURES

- Bidirectional crowbar protection
- Voltage range from 62V to 270V
- Low capacitance from 12pF to 20pF typ. @ 50V
- Low leakage current: $I_R = 2\mu\text{A max.}$
- Holding current: $I_H = 150\text{ mA min.}$
- Repetitive peak pulse current:
 $I_{PP} = 30\text{ A (10/1000 }\mu\text{s)}$

MAIN APPLICATIONS

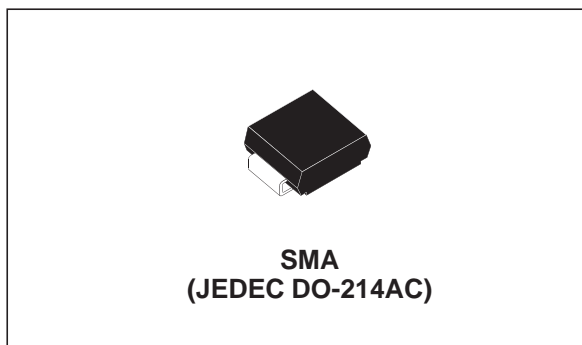
Telecommunication equipment such as

- Analog and digital line cards (xDSL, T1/E1, ISDN...).
- Terminals (phone, fax, modem...) and central office equipment.

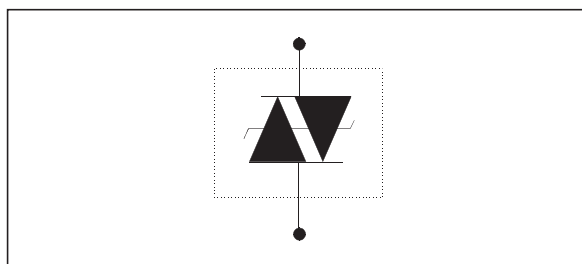
DESCRIPTION

The SMP30-xxx series has been designed to protect telecommunication equipment against lightning and transient induced by AC power lines.

The package / die size ratio has been optimized by using the SMA package.



SCHEMATIC DIAGRAM



BENEFITS

Trisils are not subject to ageing and provide a fail safe mode in short circuit for a better protection. Trisils are used to help equipment to meet various standards such as UL1950, IEC950 / CSA C22.2, UL1459 and FCC part 68. Trisils have UL94 V0 resin approved. SMA package is JEDEC registered. (Trisils are UL 497B approved - file: E136224).

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IN COMPLIANCES WITH THE FOLLOWING STANDARDS

Standard	Peak Surge Voltage (V)	Voltage Waveform (μs)	Required peak current (A)	Current Waveform (μs)	Minimum serial resistor to meet standard (Ω)
GR-1089 Core First level	2500	2/10	500	2/10	20
	1000	10/1000	100	10/1000	24
GR-1089 Core Second level	5000	2/10	500	2/10	40
GR-1089 Core Intra-building	1500	2/10	100	2/10	0
ITU-T-K20 / K21	6000	10/700	150	5/310	110
	1500		37.5		0
ITU-T-K20 (IEC61000-4-2)	6000	1/60 ns	ESD contact discharge		0
	8000		ESD air discharge		0
VDE0433	4000	10/700	100	5/310	60
	2000		50		10
VDE0878	4000	1.2/50	100	1/20	18
	2000		50		0
IEC61000-4-5	4000	10/700	100	5/310	60
	4000	1.2/50	100	8/20	18
FCC Part 68, lightning surge type A	1500	10/160	200	10/160	26
	800	10/560	100	10/560	15
FCC Part 68, lightning surge type B	1000	9/720	25	5/320	0

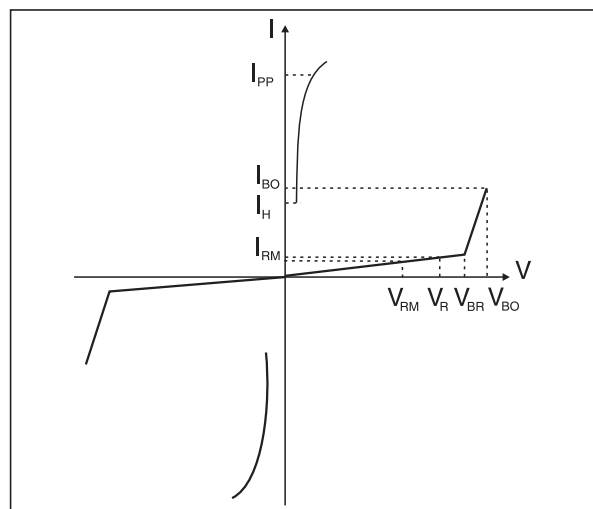
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th} (j-a)	Junction to ambient with recommended footprint	120	°C/W
R _{th} (j-l)	Junction to leads	30	°C/W

ELECTRICAL CHARACTERISTICS

(T_{amb} = 25°C)

Symbol	Parameter
V _{RM}	Stand-off voltage
I _{RM}	Leakage current at V _{RM}
V _R	Continuous reverse voltage
V _{BR}	Breakdown voltage
V _{BO}	Breakover voltage
I _H	Holding current
I _{BO}	Breakover current
I _{PP}	Peak pulse current
C	Capacitance



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ELECTRICAL PARAMETERS (Tamb = 25°C)

Type	I _{RM} @ V _{RM} max		I _R @ V _R MAX		DYNAMIC V _{BO} @ I _{BO} max		STATIC V _{BO} @ I _{BO} max		I _H min	C typ.	C typ.
	μA	V	μA	V	V	mA	V	mA	mA	pF	pF
SMP30-62	2	56	50	62	85	800	82	800	150	20	40
SMP30-68		61		68	93		90		150	20	40
SMP30-100		90		100	135		133		150	16	35
SMP30-120		108		120	160		160		150	16	30
SMP30-130		117		130	173		173		150	14	30
SMP30-180		162		180	235		240		150	14	25
SMP30-200		180		200	262		267		150	12	25
SMP30-220		198		220	285		293		150	12	25
SMP30-240		216		240	300		320		150	12	25
SMP30-270		243		270	350		360		150	12	25

- Note 1:** I_R measured at V_R guarantee V_{BRmin} ≥ V_R
- Note 2:** See functional breakover voltage test circuit 1.
- Note 3:** See test circuit 2.
- Note 4:** See functional holding current test circuit 3.
- Note 5:** V_R = 50V bias, V_{RMS} = 1V, F = 1MHz.
- Note 6:** V_R = 2V bias, V_{RMS} = 1V, F = 1MHz

Fig. 1: Non repetitive surge peak on-state current versus overload duration (T_j initial = 25°C)

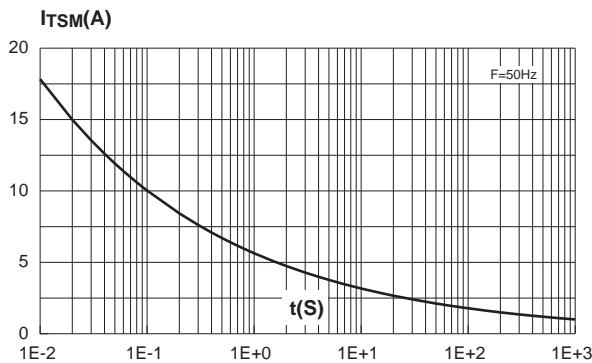
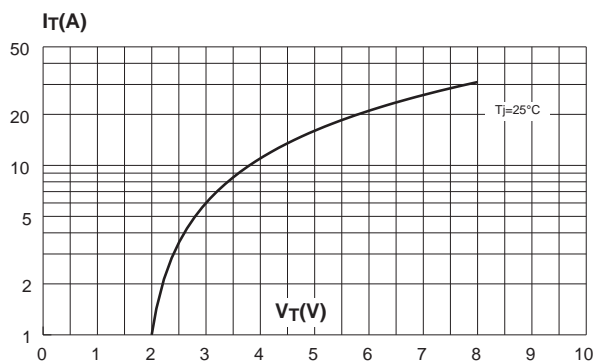


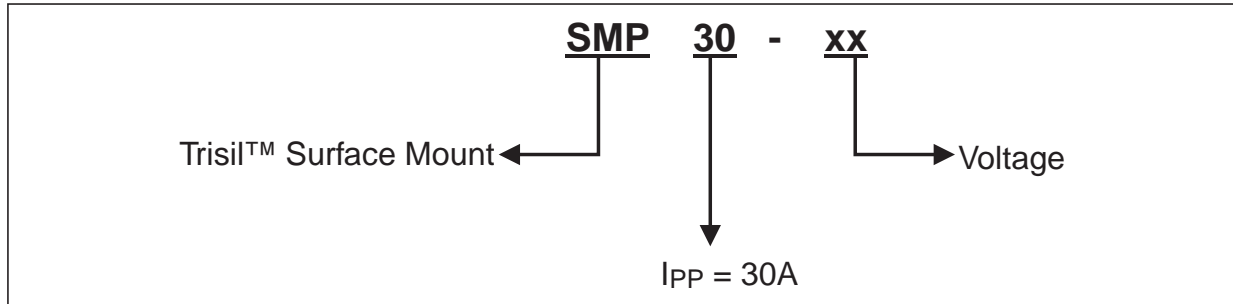
Fig. 2: On-state voltage versus on-state current (typical values).





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ORDER CODE



ORDERING INFORMATION

Part number	Marking	Package	Weight	Base qty	Delivery mode
SMP30-62	QA4	SMA	0.06 g	5000	Tape & reel
SMP30-68	QAB				
SMP30-100	QAC				
SMP30-120	QAD				
SMP30-130	QAE				
SMP30-180	QAF				
SMP30-200	QAG				
SMP30-220	QAH				
SMP30-240	QAI				
SMP30-270	QAJ				