

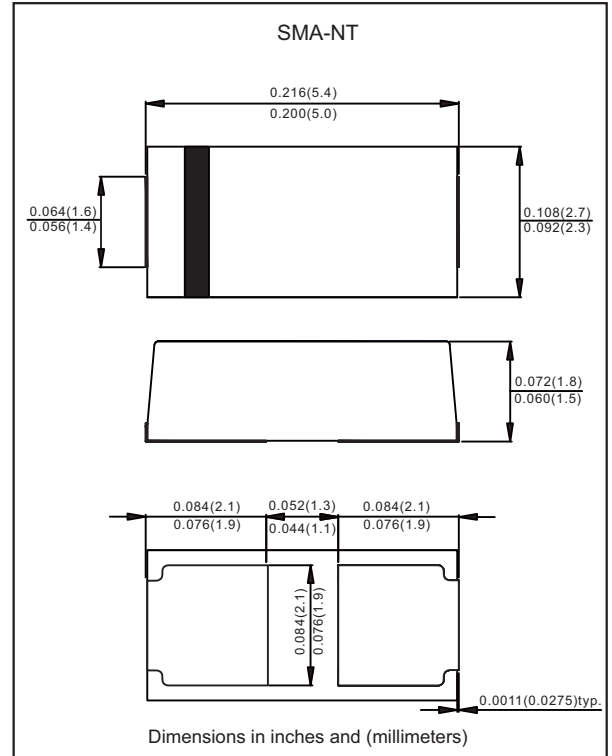
Features

- Well package design with solder pad on the bottom for best thermal performance
- Leads on two opposing sides of the body
- 1000W peak pulse power capability with a 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%
- Uni and Bidirectional unit
- Glass passivated chip junction
- Excellent clamping capability
- Low incremental surge resistance
- Lead-free parts meet RoHS requirements
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, SMA-NT
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band(Uni-directional types only)
- Mounting Position : Any

Package outline



Maximum ratings (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Peak power dissipation	with a 10/1000 μ s waveform, Note 1, 2 & Fig. 1	PPPM	1000	W
Peak pulse current	with a 10/1000 μ s waveform	IPPM	See Table	A
Steady state power dissipation	at $T_L=75^{\circ}\text{C}$, Note 2	$P_{M(AV)}$	3.0	W
Typical thermal resistance	Junction to case Junction to ambient	$R_{\theta JC}$ $R_{\theta JA}$	30 50	$^{\circ}\text{C/W}$
Operating junction temperature range		T_J	-55 to +150	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-65 to +175	$^{\circ}\text{C}$

Notes 1: Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig. 2

2: Mounted on copper pad area of 0.2"x0.2" (5.0x5.0 mm) per Fig 5

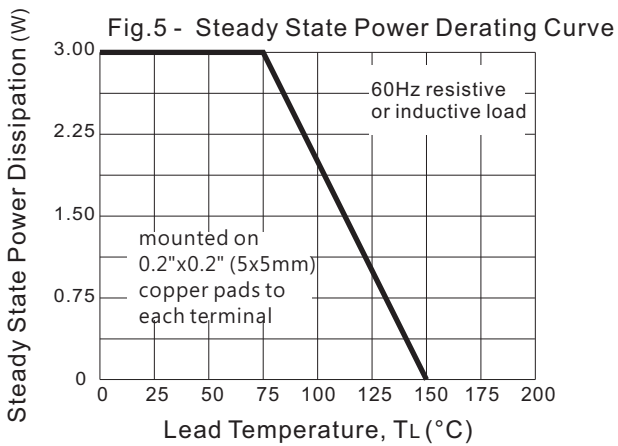
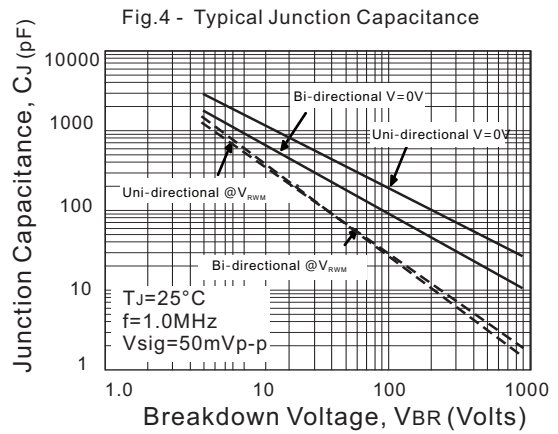
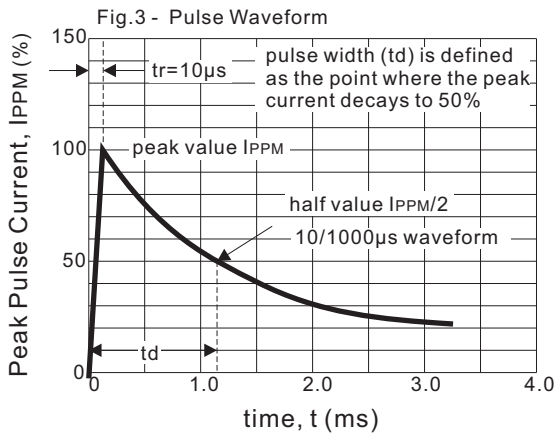
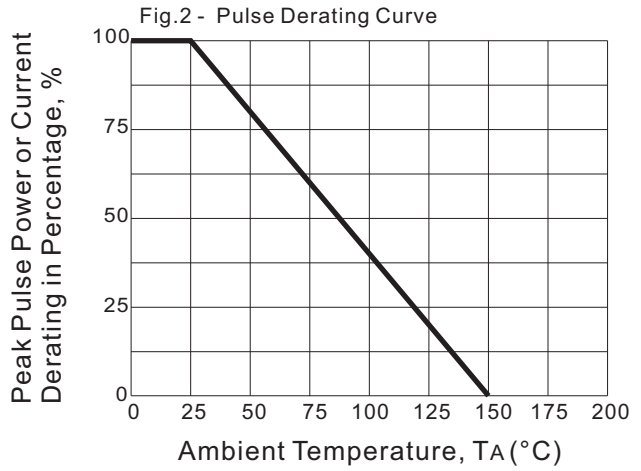
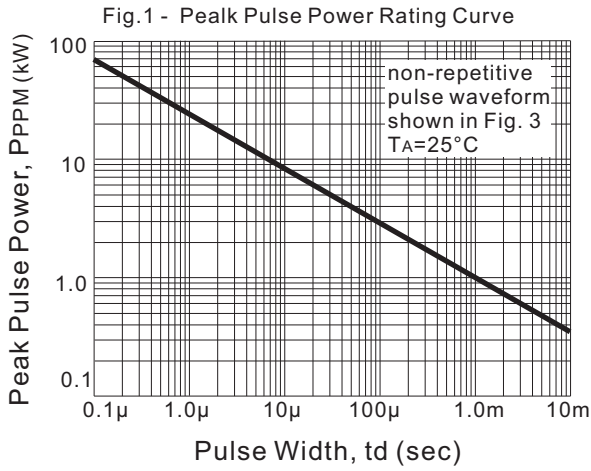
Electrical characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Part No. (Uni)	Part No. (Bi)	Reverse Stand-off Voltage	Breakdown Voltage @ I_T		Test Current	Maximum Clamping Voltage @ I_{PP}		Maximum Reverse Leakage Current	Marking Code	
		V_{RWM}	V_{BRMin}	V_{BRMax}	I_T	V_C	I_{PP}	$I_R@V_{RWM}$	Uni	Bi
		Volts	Volts	Volts	mA	Volts	A	μA		
ASAKNT20A-Q1	ASAKNT20CA-Q1	20	22.2	24.5	1.0	32.4	30.9	5	KBV	KXV
ASAKNT22A-Q1	ASAKNT22CA-Q1	22	24.4	26.9	1.0	35.5	28.2	5	KBX	KXX
ASAKNT24A-Q1	ASAKNT24CA-Q1	24	26.7	29.5	1.0	38.9	25.7	5	KBZ	KXZ
ASAKNT26A-Q1	ASAKNT26CA-Q1	26	28.9	31.9	1.0	42.1	23.8	5	KCE	KYE
ASAKNT28A-Q1	ASAKNT28CA-Q1	28	31.1	34.4	1.0	45.4	22.0	5	KCG	KYG
ASAKNT30A-Q1	ASAKNT30CA-Q1	30	33.3	36.8	1.0	48.4	20.7	5	KCK	KYK
ASAKNT33A-Q1	ASAKNT33CA-Q1	33	36.7	40.6	1.0	53.3	18.8	5	KCM	KYM
ASAKNT36A-Q1	ASAKNT36CA-Q1	36	40.0	44.2	1.0	58.1	17.2	5	KCP	KYP
ASAKNT40A-Q1	ASAKNT40CA-Q1	40	44.4	49.1	1.0	64.5	15.5	5	KCR	KYR
ASAKNT43A-Q1	ASAKNT43CA-Q1	43	47.8	52.8	1.0	69.4	14.4	5	KCT	KYT
ASAKNT45A-Q1	ASAKNT45CA-Q1	45	50.0	55.3	1.0	72.7	13.8	5	KCV	KYV
ASAKNT48A-Q1	ASAKNT48CA-Q1	48	53.3	58.9	1.0	77.4	12.9	5	KCX	KYX
ASAKNT51A-Q1	ASAKNT51CA-Q1	51	56.7	62.7	1.0	82.4	12.1	5	KCZ	KYZ
ASAKNT54A-Q1	ASAKNT54CA-Q1	54	60.0	66.3	1.0	87.1	11.5	5	KRE	KZE
ASAKNT58A-Q1	ASAKNT58CA-Q1	58	64.4	71.2	1.0	93.6	10.7	5	KRG	KZG
ASAKNT60A-Q1	ASAKNT60CA-Q1	60	66.7	73.7	1.0	96.8	10.3	5	KRK	KZK
ASAKNT64A-Q1	ASAKNT64CA-Q1	64	71.1	78.6	1.0	103	9.7	5	KRM	KZM
ASAKNT70A-Q1	ASAKNT70CA-Q1	70	77.8	86.0	1.0	113	8.9	5	KRP	KZP
ASAKNT75A-Q1	ASAKNT75CA-Q1	75	83.3	92.1	1.0	121	8.3	5	KRR	KZR
ASAKNT78A-Q1	ASAKNT78CA-Q1	78	86.7	95.8	1.0	126	7.9	5	KRT	KZT
ASAKNT85A-Q1	ASAKNT85CA-Q1	85	94.4	104	1.0	137	7.3	5	KRV	KZV
ASAKNT90A-Q1	ASAKNT90CA-Q1	90	100	111	1.0	146	6.9	5	KRX	KZX
ASAKNT100A-Q1	ASAKNT100CA-Q1	100	111	123	1.0	162	6.2	5	KRZ	KZZ
ASAKNT110A-Q1	ASAKNT110CA-Q1	110	122	135	1.0	177	5.7	5	KSE	KVE
ASAKNT120A-Q1	ASAKNT120CA-Q1	120	133	147	1.0	193	5.2	5	KSG	KVG
ASAKNT130A-Q1	ASAKNT130CA-Q1	130	144	159	1.0	209	4.8	5	KSK	KVK
ASAKNT150A-Q1	ASAKNT150CA-Q1	150	167	185	1.0	243	4.1	5	KSM	KVM
ASAKNT160A-Q1	ASAKNT160CA-Q1	160	178	197	1.0	259	3.9	5	KSP	KVP
ASAKNT170A-Q1	ASAKNT170CA-Q1	170	189	209	1.0	275	3.6	5	KSR	KVR
ASAKNT180A-Q1	ASAKNT180CA-Q1	180	201	222	1.0	292	3.4	5	KST	KVT
ASAKNT200A-Q1	ASAKNT200CA-Q1	200	224	247	1.0	324	3.1	5	KSV	KVV
ASAKNT220A-Q1	ASAKNT220CA-Q1	220	246	272	1.0	356	2.8	5	KSX	KVX
ASAKNT250A-Q1	ASAKNT250CA-Q1	250	279	309	1.0	405	2.47	5	KSZ	KVZ
ASAKNT300A-Q1	ASAKNT300CA-Q1	300	335	371	1.0	486	2.06	5	KTE	KUE
ASAKNT350A-Q1	ASAKNT350CA-Q1	350	391	432	1.0	567	1.77	5	KTG	KUG
ASAKNT400A-Q1	ASAKNT400CA-Q1	400	447	494	1.0	648	1.55	5	KTK	KUK
ASAKNT440A-Q1	ASAKNT440CA-Q1	440	492	544	1.0	713	1.41	5	KTM	KUM
ASAKNT500A-Q1	ASAKNT500CA-Q1	500	558	618	1.0	810	1.24	5	KTP	KUP
ASAKNT550A-Q1	ASAKNT550CA-Q1	550	614	680	1.0	891	1.13	5	KTR	KUR
ASAKNT600A-Q1	ASAKNT600CA-Q1	600	670	741	1.0	971	1.03	5	KTT	KUT
ASAKNT650A-Q1	ASAKNT650CA-Q1	650	726	803	1.0	1052	0.96	5	KTV	KUV
ASAKNT700A-Q1	ASAKNT700CA-Q1	700	782	865	1.0	1133	0.89	5	KTX	KUX
ASAKNT750A-Q1	ASAKNT750CA-Q1	750	837	927	1.0	1213	0.83	5	KTZ	KUZ
ASAKNT800A-Q1	ASAKNT800CA-Q1	800	893	989	1.0	1298	0.78	5	KXE	KYE

Notes 1: Suffix 'C' denotes bi-directional devices. Suffix 'A' denotes 5% tolerance devices

2: Transient Voltage Suppressors (TVS) are devices used to protect vulnerable circuits from electrical overstress such as that caused by electrostatic discharge, inductive load switching and induced lightning. Within the TVS, damaging voltage spikes are limited by clamping or avalanche action of a rugged silicon pn junction which reduces the amplitude of the transient to a nondestructive level. See Fig. 6 & Fig. 7

Rating and characteristic curves



Rating and characteristic curves

Fig. 6 - Transients of several thousand volts can be clamped to a safe level by the TVS

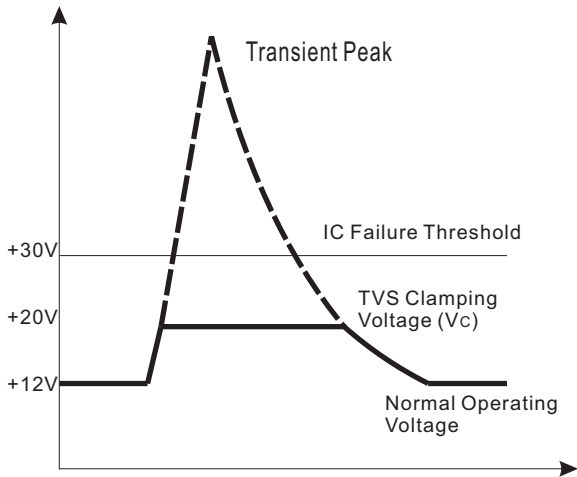
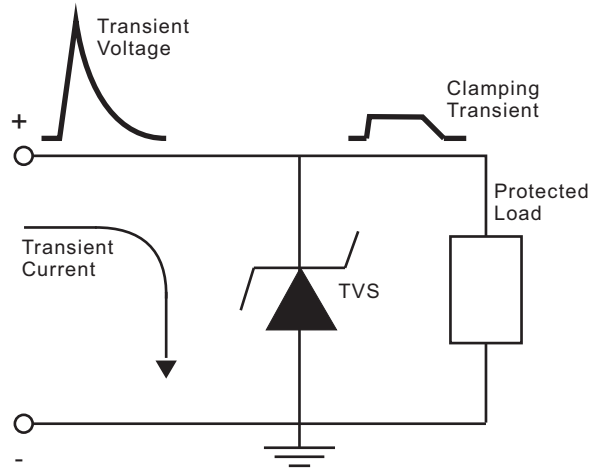






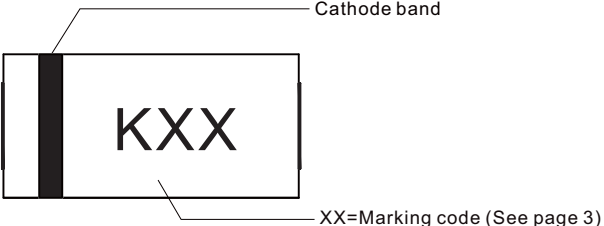
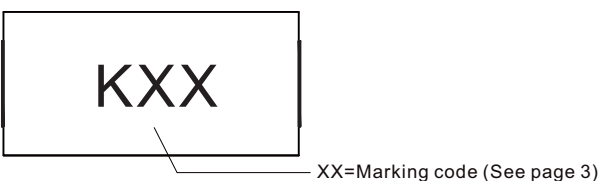
Fig. 7 - Transient current is diverted to ground thru TVS; the voltage seen by the protected load is limited to the clamping voltage level



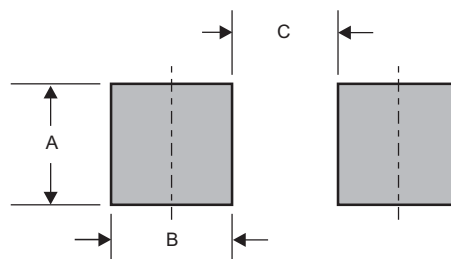
Pinning information

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		
Bi-Directional		

Marking

Type number	Example
Uni-Directional	
Bi-Directional	

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMA-NT	0.084 (2.10)	0.084 (2.10)	0.044 (1.10)