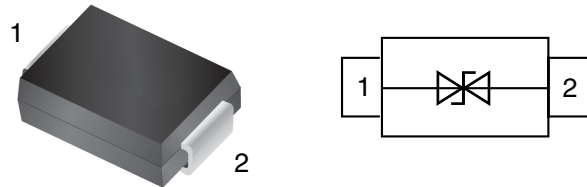


## Power TVS in DO-214AA/SMB

### Features

- Glass passivated chip
- 600W peak pulse power(10/1000us)
- High accuracy, 5% tolerance
- Uni and Bidirectional unit
- Low clamping voltage
- Low Leakage current
- Very fast response time

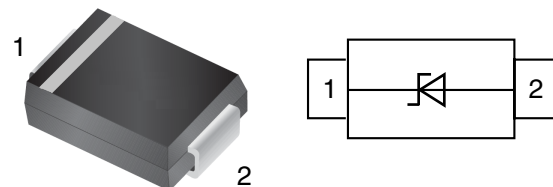
Bidirectional



### Mechanical Data

- **Case:** DO-214AA/SMB (plastic package).  
RoHS compliant
- **Molding Compound Flammability Rating:**  
UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:  
260 °C/10 sec. at terminals

Unidirectional



### Applications

- Computers
- Telecom system
- Industrial equipments
- Consumer electronic applications
- Other VCC bus and I/O interfaces

### Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000us waveform <sup>(1)</sup>	P <sub>PP</sub>	600	W
Maximum peak reverse pulse current a 10/1000us waveform <sup>(1)</sup>	I <sub>PP</sub>	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave <sup>(2)</sup>	I <sub>FSM</sub>	100	A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Notes:

- 1.Non-repetitive current pulse,per Fig.5 and detated above TA=25°C per Fig.1
- 2.Measured on 8.3ms single half sine-wave,or equivalent square wave,duty cycle=4 pulses per minute maximum

## Electrical Characteristics

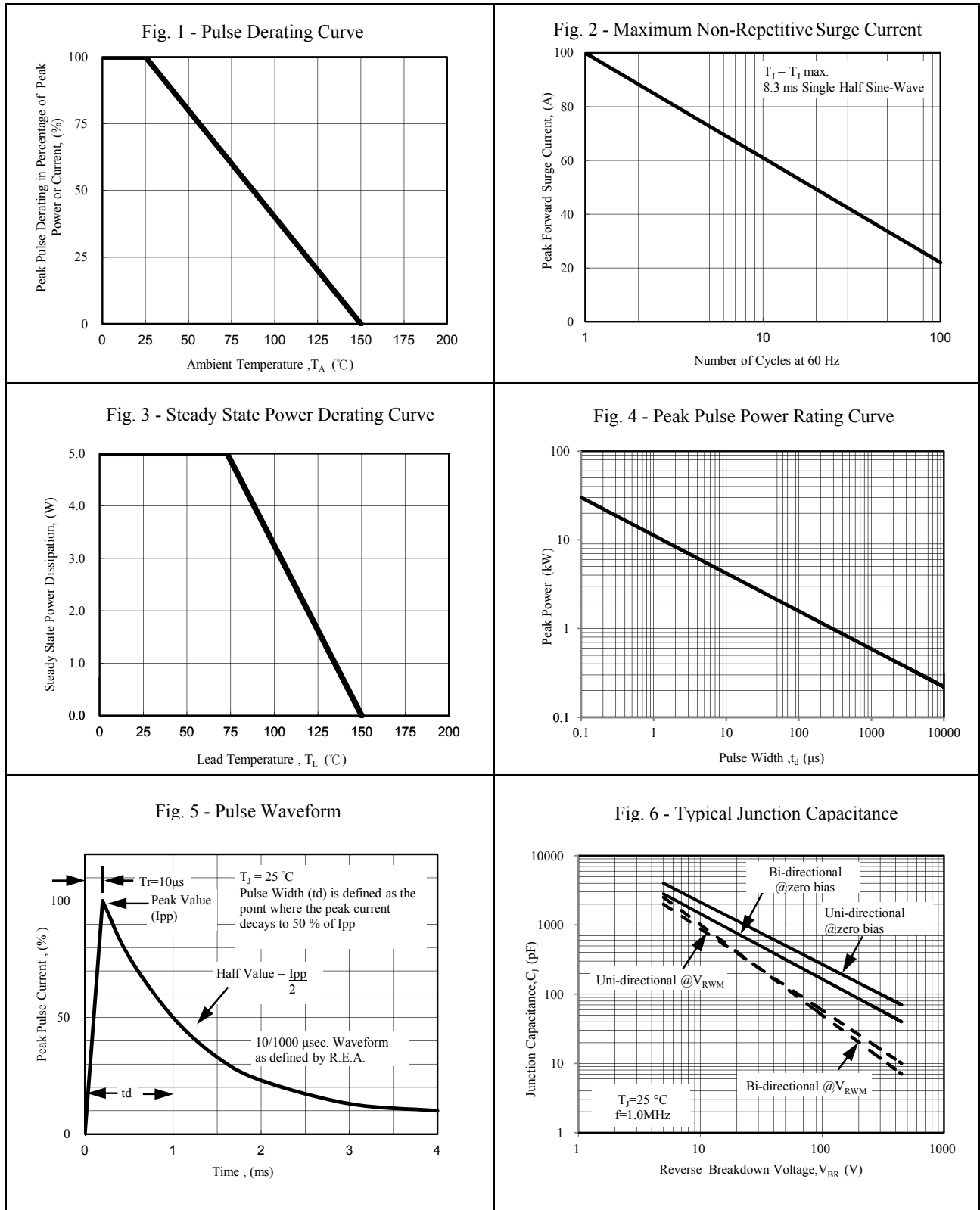
(T<sub>A</sub> = 25 °C unless otherwise specified)

Part Number	Direction	Maximum Working Voltage V <sub>RWM</sub> (V)	Maximum Reverse Current@V <sub>RWM</sub> I <sub>R</sub> max(μA)	Breakdown Voltage@I <sub>T</sub>			Peak Surge Current I <sub>PP</sub> (A)	Maximum Clamping Voltage@I <sub>PP</sub> V <sub>C</sub> (V)
				V <sub>BR</sub> min(V)	V <sub>BR</sub> max(V)	I <sub>T</sub> (mA)		
SMBJ5.0A	Uni-Dir	5.0	800	6.4	7.00	10	65.22	9.2
SMBJ5.0CA	Bi-Dir	5.0	1600	6.4	7.00	10	65.22	9.2
SMBJ6.0A	Uni-Dir	6.0	800	6.7	7.37	10	58.25	10.3
SMBJ6.0CA	Bi-Dir	6.0	1600	6.7	7.37	10	58.25	10.3
SMBJ6.5A	Uni-Dir	6.5	500	7.2	7.98	10	53.57	11.2
SMBJ6.5CA	Bi-Dir	6.5	1000	7.2	7.98	10	53.57	11.2
SMBJ7.0A	Uni-Dir	7.0	200	7.8	8.60	10	50.00	12.0
SMBJ7.0CA	Bi-Dir	7.0	400	7.8	8.60	10	50.00	12.0
SMBJ7.5A	Uni-Dir	7.5	100	8.3	9.21	1	46.51	12.9
SMBJ7.5CA	Bi-Dir	7.5	200	8.3	9.21	1	46.51	12.9
SMBJ8.0A	Uni-Dir	8.0	50	8.9	9.83	1	44.12	13.6
SMBJ8.0CA	Bi-Dir	8.0	100	8.9	9.83	1	44.12	13.6
SMBJ8.5A	Uni-Dir	8.5	10	9.4	10.40	1	41.67	14.4
SMBJ8.5CA	Bi-Dir	8.5	20	9.4	10.40	1	41.67	14.4
SMBJ9.0A	Uni-Dir	9.0	5	10.0	11.10	1	38.96	15.4
SMBJ9.0CA	Bi-Dir	9.0	10	10.0	11.10	1	38.96	15.4
SMBJ10A	Uni-Dir	10.0	5	11.1	12.30	1	35.29	17.0
SMBJ10CA	Bi-Dir	10.0	10	11.1	12.30	1	35.29	17.0
SMBJ11A	Uni-Dir	11.0	1	12.2	13.50	1	32.97	18.2
SMBJ11CA	Bi-Dir	11.0	1	12.2	13.50	1	32.97	18.2
SMBJ12A	Uni-Dir	12.0	1	13.3	14.70	1	30.15	19.9
SMBJ12CA	Bi-Dir	12.0	1	13.3	14.70	1	30.15	19.9
SMBJ13A	Uni-Dir	13.0	1	14.4	15.90	1	27.91	21.5
SMBJ13CA	Bi-Dir	13.0	1	14.4	15.90	1	27.91	21.5
SMBJ14A	Uni-Dir	14.0	1	15.6	17.20	1	25.86	23.2
SMBJ14CA	Bi-Dir	14.0	1	15.6	17.20	1	25.86	23.2
SMBJ15A	Uni-Dir	15.0	1	16.7	18.50	1	24.59	24.4
SMBJ15CA	Bi-Dir	15.0	1	16.7	18.50	1	24.59	24.4
SMBJ16A	Uni-Dir	16.0	1	17.8	19.70	1	23.08	26.0
SMBJ16CA	Bi-Dir	16.0	1	17.8	19.70	1	23.08	26.0
SMBJ17A	Uni-Dir	17.0	1	18.9	20.90	1	21.74	27.6
SMBJ17CA	Bi-Dir	17.0	1	18.9	20.90	1	21.74	27.6
SMBJ18A	Uni-Dir	18.0	1	20.0	22.10	1	20.55	29.2
SMBJ18CA	Bi-Dir	18.0	1	20.0	22.10	1	20.55	29.2
SMBJ19A	Uni-Dir	19.0	1	21.1	23.30	1	19.49	30.8
SMBJ19CA	Bi-Dir	19.0	1	21.1	23.30	1	19.49	30.8
SMBJ20A	Uni-Dir	20.0	1	22.2	24.50	1	18.52	32.4
SMBJ20CA	Bi-Dir	20.0	1	22.2	24.50	1	18.52	32.4

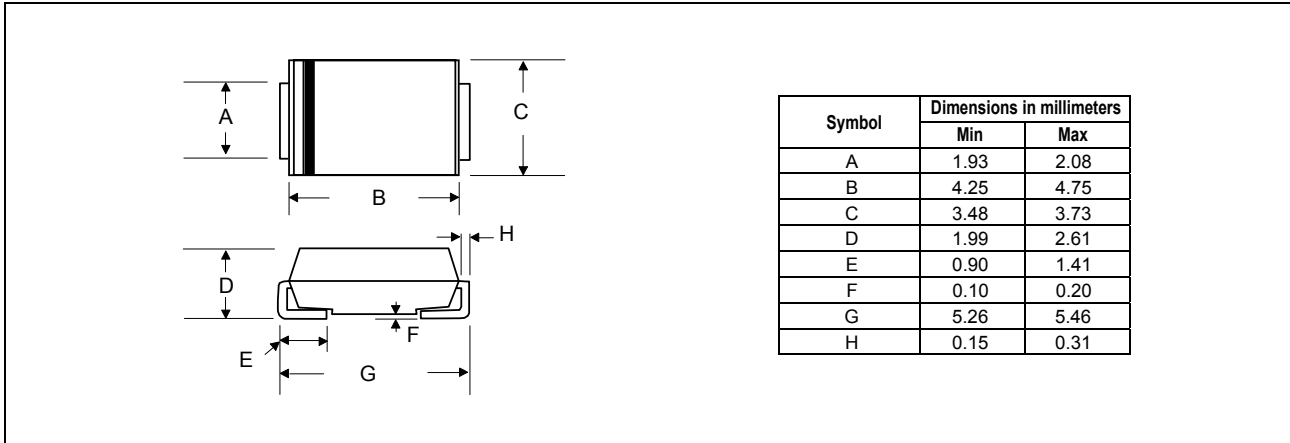
Part Number	Direction	Maximum Working Voltage $V_{RWM}$ (V)	Maximum Reverse Current@ $V_{RWM}$ $I_R$ max( $\mu$ A)	Breakdown Voltage@ $I_T$			Peak Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage@ $I_{PP}$ $V_C$ (V)
				$V_{BR}$ min(V)	$V_{BR}$ max(V)	$I_T$ (mA)		
SMBJ22A	Uni-Dir	22.0	1	24.4	26.90	1	16.90	35.5
SMBJ22CA	Bi-Dir	22.0	1	24.4	26.90	1	16.90	35.5
SMBJ24A	Uni-Dir	24.0	1	26.7	29.50	1	15.42	38.9
SMBJ24CA	Bi-Dir	24.0	1	26.7	29.50	1	15.42	38.9
SMBJ26A	Uni-Dir	26.0	1	28.9	31.90	1	14.25	42.1
SMBJ26CA	Bi-Dir	26.0	1	28.9	31.90	1	14.25	42.1
SMBJ28A	Uni-Dir	28.0	1	31.1	34.40	1	13.22	45.4
SMBJ28CA	Bi-Dir	28.0	1	31.1	34.40	1	13.22	45.4
SMBJ30A	Uni-Dir	30.0	1	33.3	36.80	1	12.40	48.4
SMBJ30CA	Bi-Dir	30.0	1	33.3	36.80	1	12.40	48.4
SMBJ33A	Uni-Dir	33.0	1	36.7	40.60	1	11.26	53.3
SMBJ33CA	Bi-Dir	33.0	1	36.7	40.60	1	11.26	53.3
SMBJ36A	Uni-Dir	36.0	1	40.0	44.20	1	10.33	58.1
SMBJ36CA	Bi-Dir	36.0	1	40.0	44.20	1	10.33	58.1
SMBJ40A	Uni-Dir	40.0	1	44.4	49.10	1	9.30	64.5
SMBJ40CA	Bi-Dir	40.0	1	44.4	49.10	1	9.30	64.5
SMBJ43A	Uni-Dir	43.0	1	47.8	52.80	1	8.65	69.4
SMBJ43CA	Bi-Dir	43.0	1	47.8	52.80	1	8.65	69.4
SMBJ45A	Uni-Dir	45.0	1	50.0	55.30	1	8.25	72.7
SMBJ45CA	Bi-Dir	45.0	1	50.0	55.30	1	8.25	72.7
SMBJ48A	Uni-Dir	48.0	1	53.3	58.90	1	7.75	77.4
SMBJ48CA	Bi-Dir	48.0	1	53.3	58.90	1	7.75	77.4
SMBJ51A	Uni-Dir	51.0	1	56.7	62.70	1	7.28	82.4
SMBJ51CA	Bi-Dir	51.0	1	56.7	62.70	1	7.28	82.4
SMBJ54A	Uni-Dir	54.0	1	60.0	66.30	1	6.89	87.1
SMBJ54CA	Bi-Dir	54.0	1	60.0	66.30	1	6.89	87.1
SMBJ58A	Uni-Dir	58.0	1	64.4	71.20	1	6.41	93.6
SMBJ58CA	Bi-Dir	58.0	1	64.4	71.20	1	6.41	93.6
SMBJ60A	Uni-Dir	60.0	1	66.7	73.70	1	6.20	96.8
SMBJ60CA	Bi-Dir	60.0	1	66.7	73.70	1	6.20	96.8
SMBJ64A	Uni-Dir	64.0	1	71.1	78.60	1	5.83	103.0
SMBJ64CA	Bi-Dir	64.0	1	71.1	78.60	1	5.83	103.0
SMBJ70A	Uni-Dir	70.0	1	77.8	86.00	1	5.31	113.0
SMBJ70CA	Bi-Dir	70.0	1	77.8	86.00	1	5.31	113.0
SMBJ75A	Uni-Dir	75.0	1	83.3	92.10	1	4.96	121.0
SMBJ75CA	Bi-Dir	75.0	1	83.3	92.10	1	4.96	121.0
SMBJ78A	Uni-Dir	78.0	1	86.7	95.80	1	4.76	126.0
SMBJ78CA	Bi-Dir	78.0	1	86.7	95.80	1	4.76	126.0

Part Number	Direction	Maximum Working Voltage $V_{RWM}$ (V)	Maximum Reverse Current@ $V_{RWM}$ $I_R$ max(uA)	Breakdown Voltage@ $I_T$			Peak Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage@ $I_{PP}$ $V_C$ (V)
				$V_{BR}$ min(V)	$V_{BR}$ max(V)	$I_T$ (mA)		
SMBJ80A	Uni-Dir	80.0	1	88.8	97.60	1	4.63	129.6
SMBJ80CA	Bi-Dir	80.0	1	88.8	97.60	1	4.63	129.6
SMBJ85A	Uni-Dir	85.0	1	94.4	104.00	1	4.38	137.0
SMBJ85CA	Bi-Dir	85.0	1	94.4	104.00	1	4.38	137.0
SMBJ90A	Uni-Dir	90.0	1	100.0	111.00	1	4.11	146.0
SMBJ90CA	Bi-Dir	90.0	1	100.0	111.00	1	4.11	146.0
SMBJ100A	Uni-Dir	100.0	1	111.0	123.00	1	3.70	162.0
SMBJ100CA	Bi-Dir	100.0	1	111.0	123.00	1	3.70	162.0
SMBJ110A	Uni-Dir	110.0	1	122.0	135.00	1	3.39	177.0
SMBJ110CA	Bi-Dir	110.0	1	122.0	135.00	1	3.39	177.0
SMBJ120A	Uni-Dir	120.0	1	133.0	147.00	1	3.11	193.0
SMBJ120CA	Bi-Dir	120.0	1	133.0	147.00	1	3.11	193.0
SMBJ130A	Uni-Dir	130.0	1	144.0	159.00	1	2.87	209.0
SMBJ130CA	Bi-Dir	130.0	1	144.0	159.00	1	2.87	209.0
SMBJ140A	Uni-Dir	140.0	1	155.0	171.00	1	2.65	226.8
SMBJ140CA	Bi-Dir	140.0	1	155.0	171.00	1	2.65	226.8
SMBJ150A	Uni-Dir	150.0	1	167.0	185.00	1	2.47	243.0
SMBJ150CA	Bi-Dir	150.0	1	167.0	185.00	1	2.47	243.0
SMBJ160A	Uni-Dir	160.0	1	178.0	197.00	1	2.32	259.0
SMBJ160CA	Bi-Dir	160.0	1	178.0	197.00	1	2.32	259.0
SMBJ170A	Uni-Dir	170.0	1	189.0	209.00	1	2.18	275.0
SMBJ170CA	Bi-Dir	170.0	1	189.0	209.00	1	2.18	275.0
SMBJ180A	Uni-Dir	180.0	1	200.0	220.00	1	2.06	291.6
SMBJ180CA	Bi-Dir	180.0	1	200.0	220.00	1	2.06	291.6
SMBJ190A	Uni-Dir	190.0	1	211.0	232.00	1	1.95	307.8
SMBJ190CA	Bi-Dir	190.0	1	211.0	232.00	1	1.95	307.8
SMBJ200A	Uni-Dir	200.0	1	224.0	247.00	1	1.85	324.0
SMBJ200CA	Bi-Dir	200.0	1	224.0	247.00	1	1.85	324.0
SMBJ220A	Uni-Dir	220.0	1	246.0	272.00	1	1.69	356.0
SMBJ220CA	Bi-Dir	220.0	1	246.0	272.00	1	1.69	356.0
SMBJ250A	Uni-Dir	250.0	1	279.0	309.00	1	1.48	405.0
SMBJ250CA	Bi-Dir	250.0	1	279.0	309.00	1	1.48	405.0
SMBJ300A	Uni-Dir	300.0	1	335.0	371.00	1	1.23	486.0
SMBJ300CA	Bi-Dir	300.0	1	335.0	371.00	1	1.23	486.0
SMBJ350A	Uni-Dir	350.0	1	391.0	432.00	1	1.06	567.0
SMBJ350CA	Bi-Dir	350.0	1	391.0	432.00	1	1.06	567.0
SMBJ400A	Uni-Dir	400.0	1	447.0	494.00	1	0.93	648.0
SMBJ400CA	Bi-Dir	400.0	1	447.0	494.00	1	0.93	648.0
SMBJ440A	Uni-Dir	440.0	1	492.0	543.00	1	0.84	713.0
SMBJ440CA	Bi-Dir	440.0	1	492.0	543.00	1	0.84	713.0

**Typical Characteristics** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)



## Package Dimensions



## Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
SMBJ Series	DO-214AA/SMB	Tape and reel	3000pcs / reel	EIA STD RS-481

## Revision history

Date	Revision	Changes
23-May-2012	1.0	Initial release

### CAUTION / WARNING

Information in this document is believed to be accurate and reliable. However, CREATEK does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information.

Users should independently evaluate the suitability of and test each product selected for their own applications, and CREATEK assumes no liability whatsoever relating to the choice, selection or use of the CREATEK products and services described herein.

CREATEK reserves the right to change or update, without notice, any information contained in this publication; to change, without notice, the design, construction, processing, or specification of any product; and to discontinue or limit production or distribution of any product.

Information in this document supersedes and replaces all information previously supplied.

Products are not designed, authorized or warranted to be suitable for use in medical, military, aircraft, space or life support equipment, nor in applications where failure or malfunction of an CREATEK product can reasonably be expected to result in personal injury, death or severe property or environmental damage. CREATEK accepts no liability for inclusion and/or use of CREATEK products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from national authorities.


Resale of CREATEK products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by CREATEK for the CREATEK product or service described herein and shall not create or extend in any manner whatsoever, any liability of CREATEK.

CREATEK expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. CREATEK only obligations are those in the CREATEK Standard Terms and Conditions of Sale and in no case will CREATEK be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.

---

Specifications are subject to change without notice

© Copyright 2009, CREATEK Microelectronics

 CREATEK® is a registered trademark of CREATEK Microelectronics

All rights reserved