SMDJxxx(C)A

Transient Voltage Suppressor

Features

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- 3000W peak pulse power capability at 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- Fast response time
- Typical IR less than 1μA above 10V
- High Temperature soldering: 260℃/10 seconds at terminals
- Plastic package has underwriters laboratory flammability 94V-0
- Meets MSL level 1, per J-STD-020
- Safety certification: UL
- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance



SMC
(DO-214AB)

Mechanical Data

- Case: JEDEC SMC(DO-214AB) molded plastic over glass passivated junction
- Terminals: Solderable per MIL-STD-750,Method 2026
- Polarity: Polarity symbol marking on body Mounting
- Standard Packaging: 16mm tape (EIA STD RS-481)
- Weight: 0.28g

Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232,RS485,etc.)

Maximum Ratings (Ta=25°C unless otherwise noted)

Peak pulse power dissipation at 10/1000μs waveform (Note1, Note2, Fig.1)	P_{PPM}	3000	W
Peak pulse current of at 10/1000μs waveform (Note 1, Fig.3)	I_{PPM}	See Tale	A
Steady state power dissipation at T_A=50℃ (Fig.5)	$P_{M(AV)}$	6.5	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	I_{FSM}	300	A
Operating junction and Storage Temperature Range.	T_J,T_{STG}	-65 to +150	°C
Typical thermal resistance junction to lead	$R_{\theta JL}$	15	°C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	75	°C/W

Notes:1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25℃ per Fig.2.
2. Mounted on 5.0mm×5.0mm (0.03mm thick) copper pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

Electrical Characteristics (Ta=25°C)

Part Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
Unidirectional	Bidirectional	UNI	BI	V_{RWM}(V)	V_{BR}(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)
SMDJ5.0A	SMDJ5.0CA	RDE	DDE	5.0	6.40~7.00	10	9.2	326.1	800
SMDJ6.0A	SMDJ6.0CA	RDG	DDG	6.0	6.67~7.37	10	10.3	291.3	800
SMDJ6.5A	SMDJ6.5CA	RDK	DDK	6.5	7.22~7.98	10	11.2	267.9	500
SMDJ7.0A	SMDJ7.0CA	PDM	DDM	7.0	7.78~8.60	10	12.0	250.0	200
SMDJ7.5A	SMDJ7.5CA	PDP	DDP	7.5	8.33~9.21	1	12.9	232.6	100
SMDJ8.0A	SMDJ8.0CA	PDR	DDR	8.0	8.89~9.83	1	13.6	220.6	50
SMDJ8.5A	SMDJ8.5CA	PDT	DDT	8.5	9.44~10.40	1	14.4	208.3	20
SMDJ9.0A	SMDJ9.0CA	PDV	DDV	9.0	10.00~11.10	1	15.4	194.8	10
SMDJ10A	SMDJ10CA	PDX	DDX	10.0	11.10~12.30	1	17.0	176.5	5
SMDJ11A	SMDJ11CA	PDZ	DDZ	11.0	12.20~13.50	1	18.2	164.8	2
SMDJ12A	SMDJ12CA	PEE	DEE	12.0	13.30~14.70	1	19.9	150.8	2
SMDJ13A	SMDJ13CA	PEG	DEG	13.0	14.40~15.90	1	21.5	139.5	2
SMDJ14A	SMDJ14CA	PEK	DEK	14.0	15.60~17.20	1	23.2	129.3	2
SMDJ15A	SMDJ15CA	PEM	DEM	15.0	16.70~18.50	1	24.4	123.0	2
SMDJ16A	SMDJ16CA	PEP	DEP	16.0	17.80~19.70	1	26.0	115.4	2
SMDJ17A	SMDJ17CA	PER	DER	17.0	18.90~20.90	1	27.6	108.7	2
SMDJ18A	SMDJ18CA	PET	DET	18.0	20.00~22.10	1	29.2	102.7	2
SMDJ20A	SMDJ20CA	PEV	DEV	20.0	22.20~24.50	1	32.4	92.6	2
SMDJ22A	SMDJ22CA	PEX	DEX	22.0	24.40~26.90	1	35.5	84.5	2
SMDJ24A	SMDJ24CA	PEZ	DEZ	24.0	26.70~29.50	1	38.9	77.1	2
SMDJ26A	SMDJ26CA	PFE	DFE	26.0	28.90~31.90	1	42.1	71.3	2
SMDJ28A	SMDJ28CA	PFG	DFG	28.0	31.10~34.40	1	45.4	66.1	2
SMDJ30A	SMDJ30CA	PFK	DFK	30.0	33.30~36.80	1	48.4	62.0	2
SMDJ33A	SMDJ33CA	PFM	DFM	33.0	36.70~40.60	1	53.3	56.3	2
SMDJ36A	SMDJ36CA	PFP	DFP	36.0	40.00~44.20	1	58.1	51.6	2
SMDJ40A	SMDJ40CA	PFR	DFR	40.0	44.40~49.10	1	64.5	46.5	2
SMDJ43A	SMDJ43CA	PFT	DFT	43.0	47.80~52.80	1	69.4	43.2	2
SMDJ45A	SMDJ45CA	PFV	DFV	45.0	50.00~55.30	1	72.7	41.3	2
SMDJ48A	SMDJ48CA	PFX	DFX	48.0	53.30~58.90	1	77.4	38.8	2
SMDJ51A	SMDJ51CA	PFZ	DFZ	51.0	56.70~62.70	1	82.4	36.4	2
SMDJ54A	SMDJ54CA	PGE	DGE	54.0	60.00~66.30	1	87.1	34.4	2
SMDJ58A	SMDJ58CA	PGG	DGG	58.0	64.40~71.20	1	93.6	32.1	2
SMDJ60A	SMDJ60CA	PGK	DGK	60.0	66.70~73.70	1	96.8	31.0	2

Part Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
Unidirectional	Bidirectional	UNI	BI	V_{RWM}(V)	V_{BR}(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)
SMDJ64A	SMDJ64CA	PGM	DGM	64.0	71.10~78.60	1	103.0	29.1	2
SMDJ70A	SMDJ70CA	PGP	DGP	70.0	77.80~86.00	1	113.0	26.5	2
SMDJ75A	SMDJ75CA	PGR	DGR	75.0	83.30~92.10	1	121.0	24.8	2
SMDJ78A	SMDJ78CA	PGT	DGT	78.0	86.70~95.80	1	126.0	23.8	2
SMDJ85A	SMDJ85CA	PGV	DGV	85.0	94.40~104.00	1	137.0	21.9	2
SMDJ90A	SMDJ90CA	PGX	DGX	90.0	100.00~111.00	1	146.0	20.5	2
SMDJ100A	SMDJ100CA	PGZ	DGZ	100.0	111.00~123.00	1	162.0	18.5	2
SMDJ110A	SMDJ110CA	PHE	DHE	110.0	122.00~135.00	1	177.0	16.9	2
SMDJ120A	SMDJ120CA	PHG	DHG	120.0	133.00~147.00	1	193.0	15.5	2
SMDJ130A	SMDJ130CA	PHK	DHK	130.0	144.00~159.00	1	209.0	14.4	2
SMDJ150A	SMDJ150CA	PHM	DHM	150.0	167.00~185.00	1	243.0	12.3	2
SMDJ160A	SMDJ160CA	PHP	DHP	160.0	178.00~197.00	1	259.0	11.6	2
SMDJ170A	SMDJ170CA	PHR	DHR	170.0	189.00~209.00	1	275.0	10.9	2
SMDJ180A	SMDJ180CA	HHT	IHT	180.0	201.00~222.00	1	292.0	10.3	2
SMDJ190A	SMDJ190CA	HHV	IHV	190.0	211.00~233.00	1	308.0	9.7	2
SMDJ200A	SMDJ200CA	HHX	IHX	200.0	224.00~247.00	1	324.0	9.3	2
SMDJ210A	SMDJ210CA	HHZ	IHZ	210.0	237.00~263.00	1	340.0	8.8	2
SMDJ220A	SMDJ220CA	HIE	IIE	220.0	246.00~272.00	1	356.0	8.4	2

Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

Figure 1. Peak Pulse Power Rating Curve

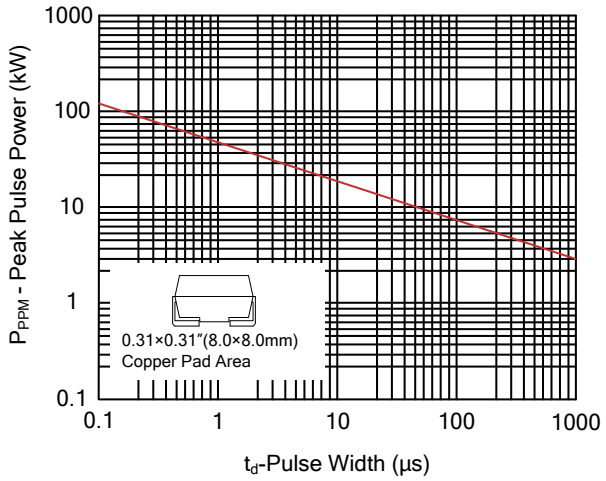


Figure 2. Pulse Derating Curve

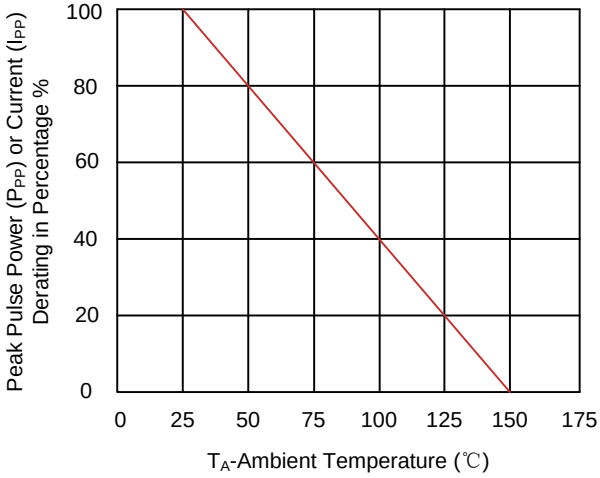


Figure 3. Pulse Waveform

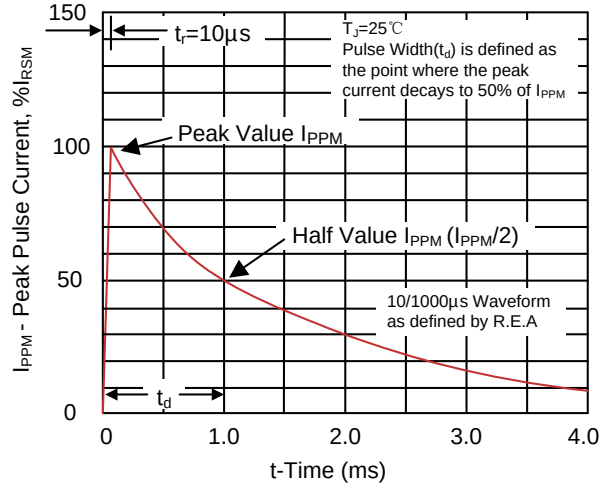


Figure 4. Typical Junction Capacitance

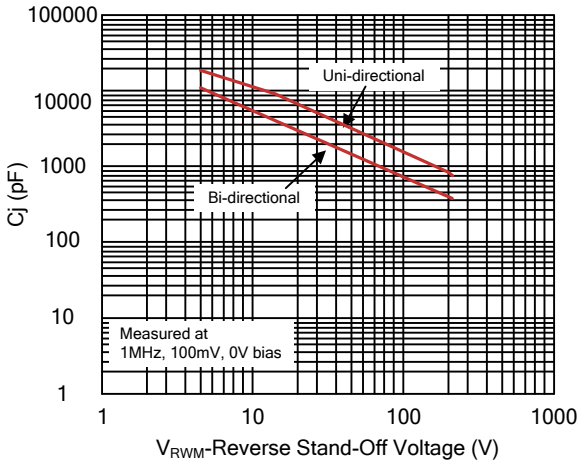


Figure 5. Steady State Power Dissipation Derating Curve

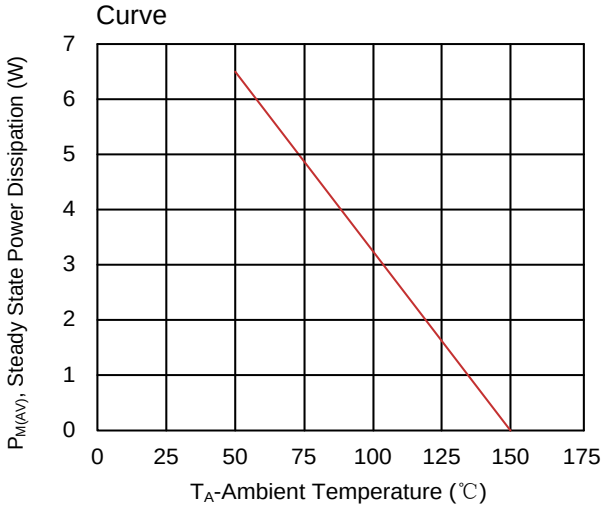
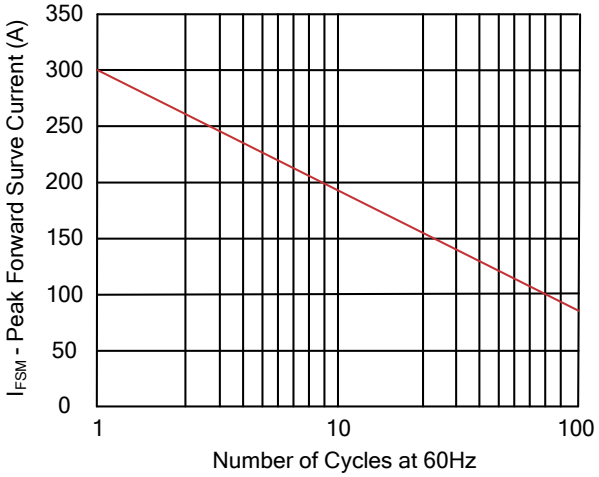
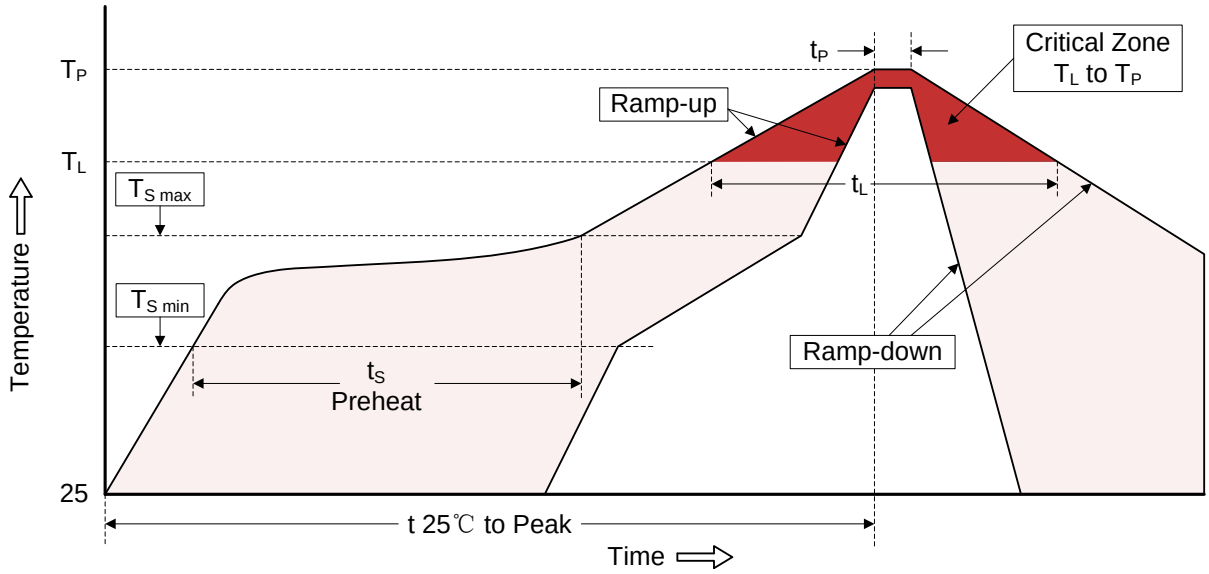


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni Directional Only



Recommended Soldering Conditions

Reflow Soldering

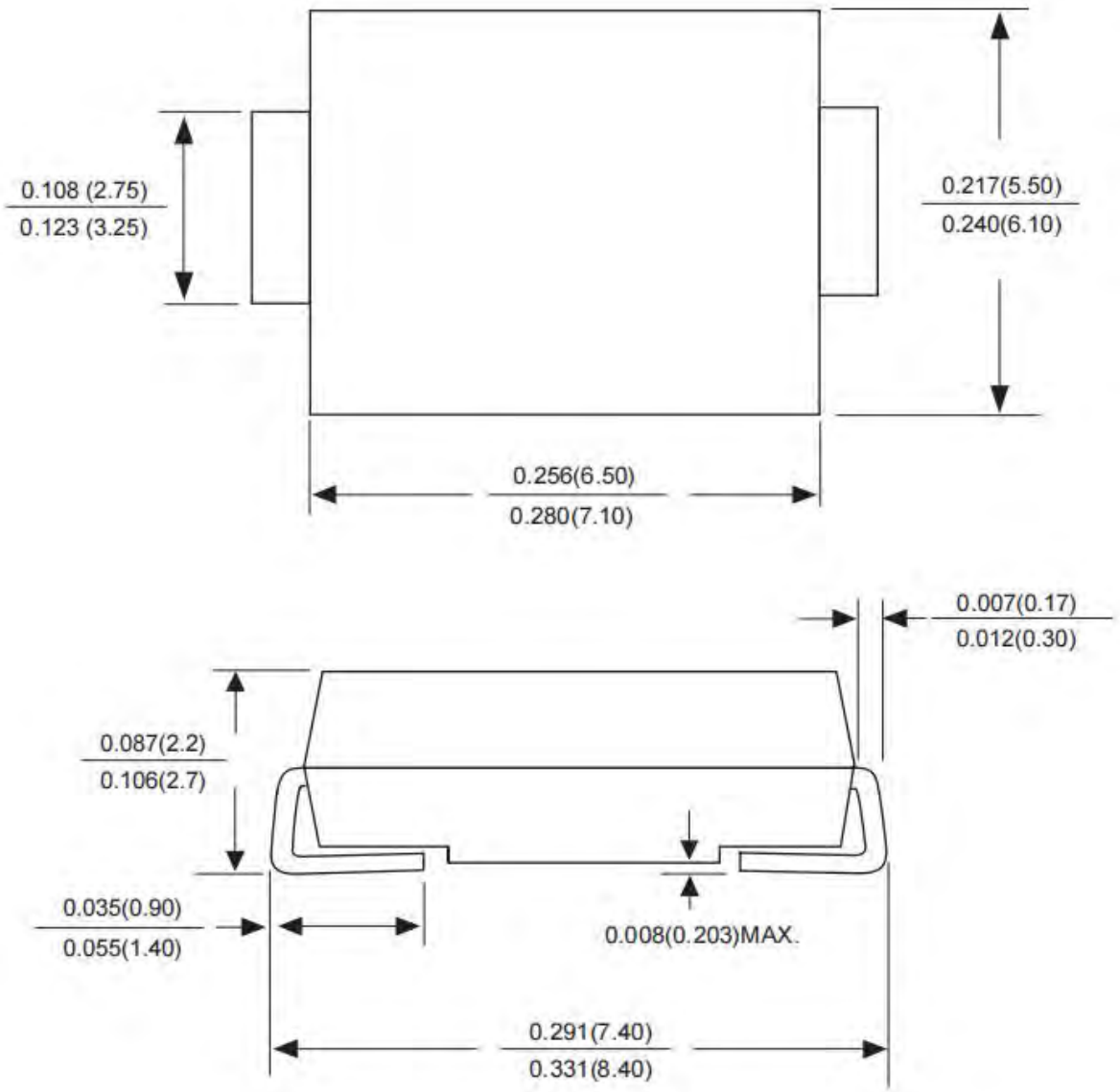


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_S)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

Package Outline Dimensions

SMC(DO-214AB)



Dimensions in inches and (millimeters)

Attention

■ Any and all HUA XUAN YANG ELECTRONICS products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.

■ HUA XUAN YANG ELECTRONICS assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein.

■ Specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.

■ HUA XUAN YANG ELECTRONICS CO.,LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could
give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.

■ In the event that any or all HUA XUAN YANG ELECTRONICS products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.

■ No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of HUA XUAN YANG ELECTRONICS CO.,LTD.

■ Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. HUA XUAN YANG ELECTRONICS believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the HUA XUAN YANG ELECTRONICS product that you intend to use.

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

HXY MOSFET:

MJD127G 1SMB5930BT3G 1SMB5934B 2N7002-HXY AOD403-HXY TPS7A0533PDBZR-HXY HBAS40-05LT1G E4D10120A MSC040SMA120B4 S3D08065E SS5150 IDL10G65C5XUMA2 C4D08120E-TR C6D06065Q-TR CH440G DSC06065 ISL28233FUZ-T7 SG3525-HXY TLV74318PDBVR-HXY IRLML2244TRPBF-HXY PTVSHC3D5VU Si2323DS-T1-E3-HXY TPD1E0B04DPYR BD237STU C3M0040120D DMPH6250SQ-13 MUR1040FCT S4D15120H SGM3798YG/TR ISL28133FHZ-T7