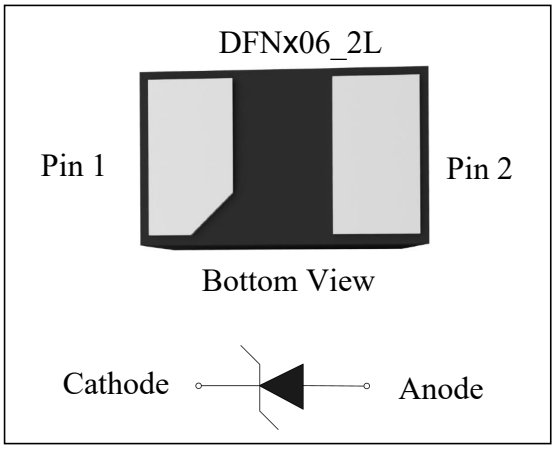
ESDU5V0ADB

Power Transient Voltage Suppressor

Features

- Uni-directional ESD Protection of one line
- Working voltage：3.3V, 5.0V, 12V
- Transient protection for each line according to IEC61000-4-2 (ESD): ±8kV (contact discharge)
- Low leakage current
- Low reverse clamping voltage



Mechanical Characteristics

- Case: DFN06-2L package
- Packaging: Tape and Reel per EIA 481
- RoHS Compliant
- Markig Code

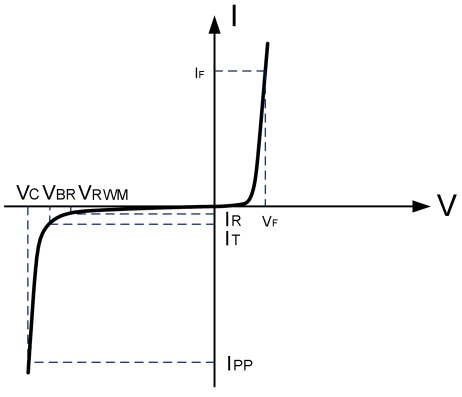
Applications

- Cell phone handsets and accessories
- Audio and video equipment
- Portable Electronics

Absolute Maximum Rating(Ratings at 25 °C ambient temperature unless otherwise specified.)				
Rating		**Symbol**	**Value**	**Units**
IEC61000-4-2 ESD Voltage	Air Model	V_{ESD}	±15	KV
	Contact Model		±8	
Junction Temperature		TJ	125	°C
Storage Temperature Range		TSTG	-45 to +125	°C

Electrical Parameter（Tc=25°C Unless otherwise specified）

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage
V_F	Forward Voltage@I_F



Electrical Characteristics

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Parameter	Symbols	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}	--	--	3.3	V
Reverse Leakage Current at V_{RWM} = 3.3 V	I_R	--	--	0.5	μA
Forward Voltage at I_F =10 mA	V_F	--	0.79	1.1	V
Breakdown Voltage at I_T = 1 mA	V_R(BR)	5	--	6.2	V
Peak Pulse Power Dissipation tp = 8/20μs	P_{PP}	--	--	240	W
Peak Pulse Current tp = 8/20μs	I_{PP}	--	--	12	A
Clampimg Voltage at I_{PP} =3 A, tp=8/20μs at I_{PP} =12 A, tp=8/20μs	V_C	-- --	7 15	10 20	V
Junction Capacitance at V_R = 0 V, f = 1 M_{HZ}	C_J	--	120	--	pF

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Parameter	Symbols	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	VRWM	--	--	5	V
Reverse Leakage Current at VRWM = 5 V	IR	--	--	0.5	μA
Forward Voltage at IF =10 mA	VF	--	0.79	1.1	V
Breakdown Voltage at IT = 5 mA	VR(BR)	6	--	7.5	V
Peak Pulse Power Dissipation tp = 8/20μs	PPP	--	--	250	W
Peak Pulse Current tp = 8/20μs	IPP	--	--	10	A
Clampimg Voltage at IPP =3 A, tp=8/20μs at IPP =10 A, tp=8/20μs	VC	-- --	8.8 17	12 25	V
Junction Capacitance at VR = 0 V, f = 1 MHz	CJ	--	100	150	pF

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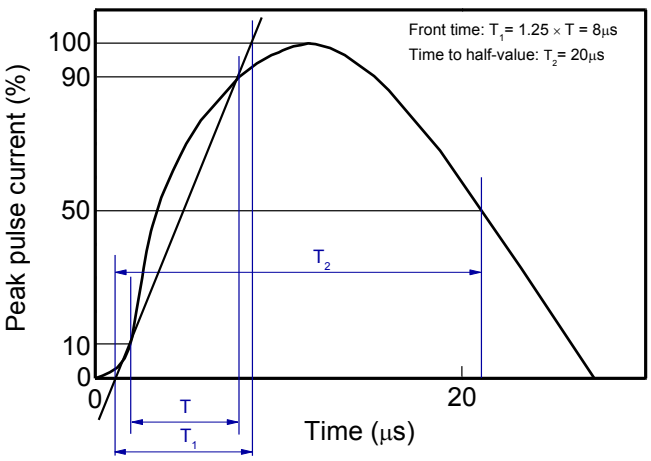
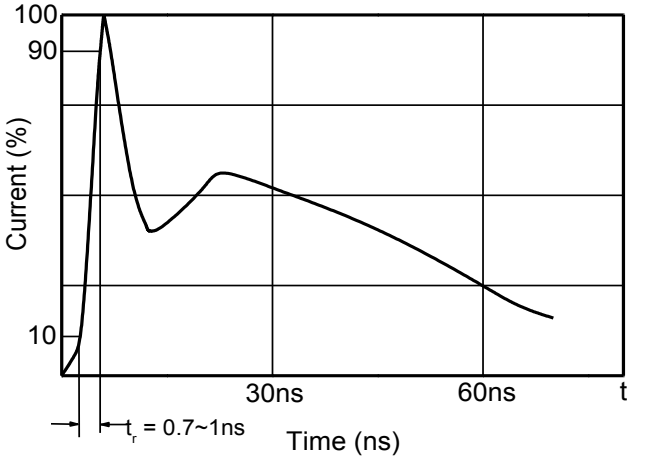
Parameter	Symbols	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	VRWM	--	--	12	V
Reverse Leakage Current at VRWM = 12 V	IR	--	--	0.1	μA
Forward Voltage at IF =10 mA	VF	--	0.79	1.1	V
Breakdown Voltage at IT = 1 mA	VR(BR)	13.5	--	16.5	V
Peak Pulse Power Dissipation tp = 8/20μs	PPP	--	--	500	W
Peak Pulse Current tp = 8/20μs	IPP	--	--	10	A
Clampimg Voltage at IPP =3 A, tp=8/20μs at IPP =10 A, tp=8/20μs	VC	-- --	17 45	20 50	V
Junction Capacitance at VR = 0 V, f = 1 MHz	CJ	--	45	--	pF

Typical Characteristics Curves

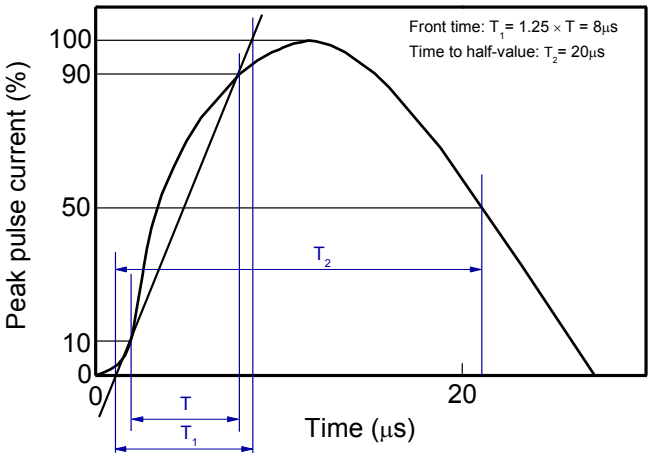


8/20μs waveform per IEC61000-4-5

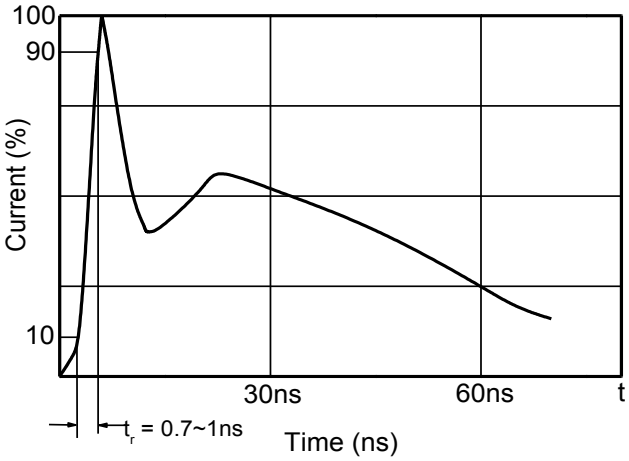


Contact discharge current waveform per IEC61000-4-2

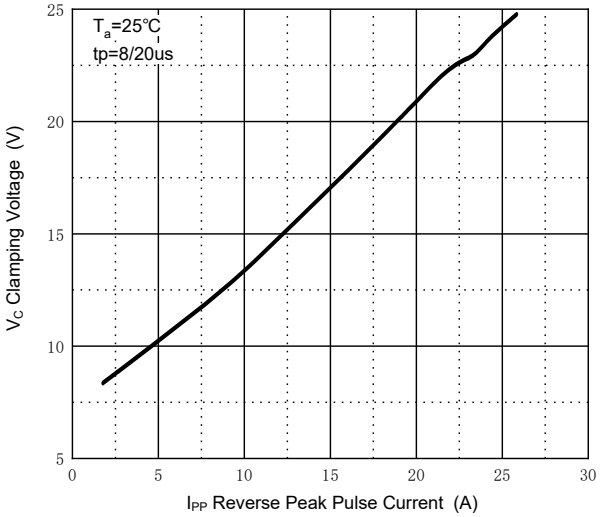
ESDU3V3ADB

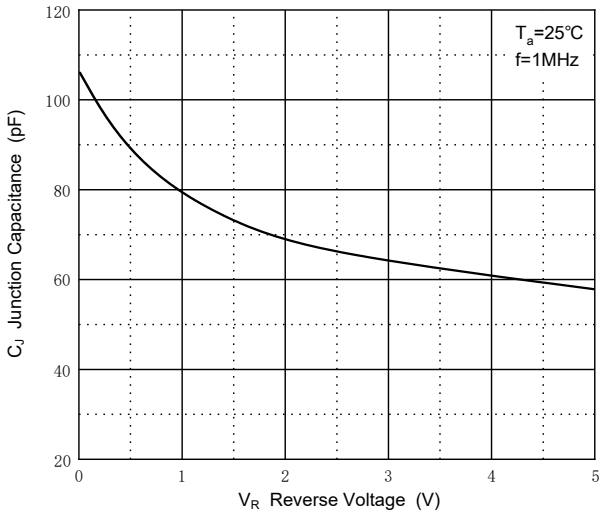


8/20μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2





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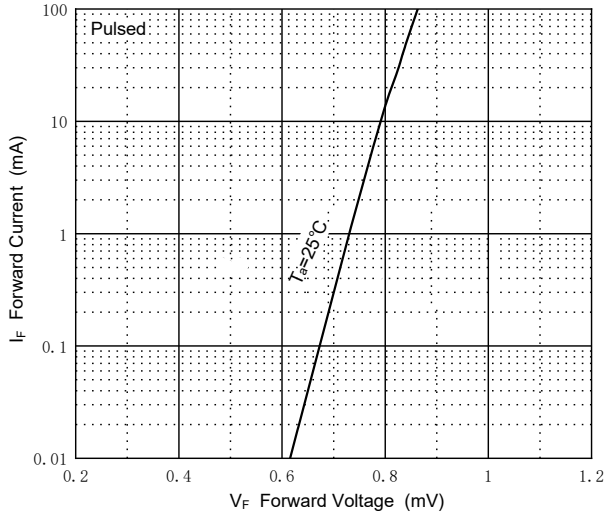
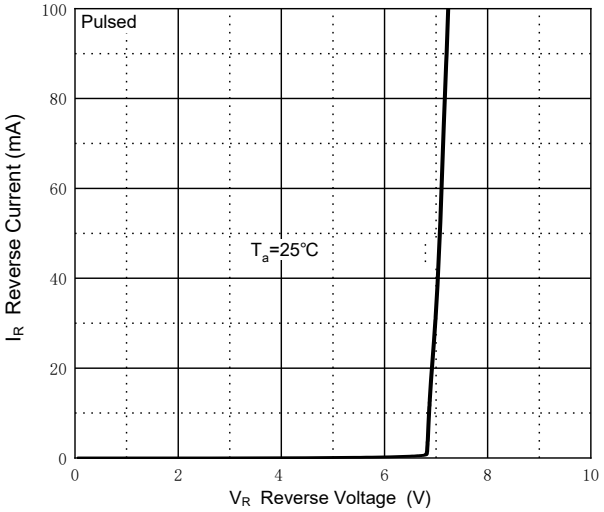
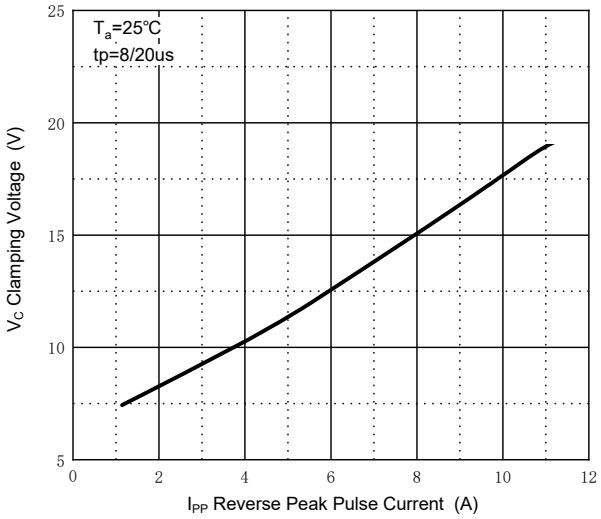
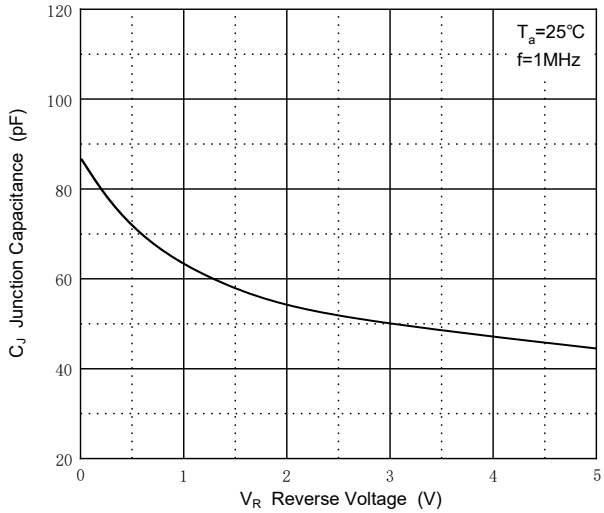
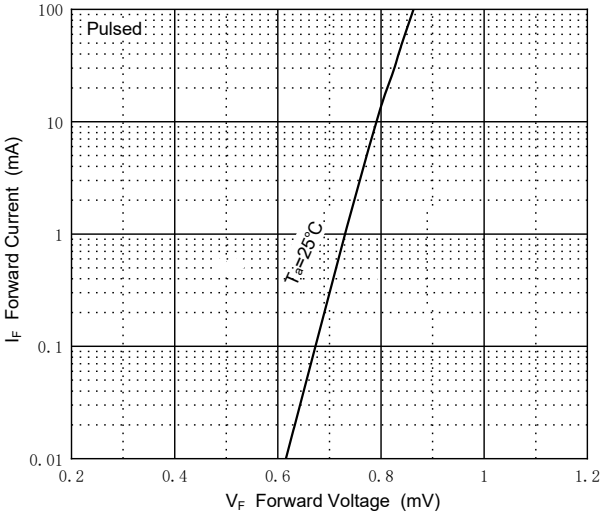


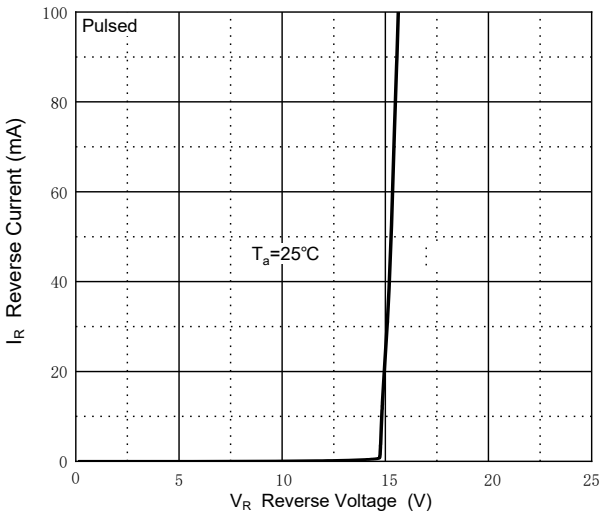


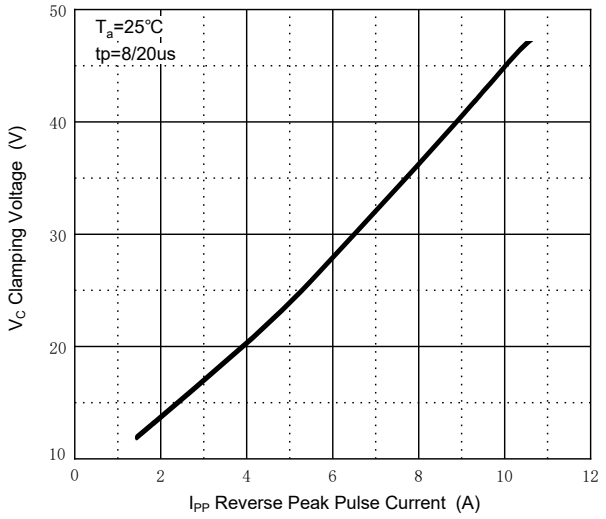


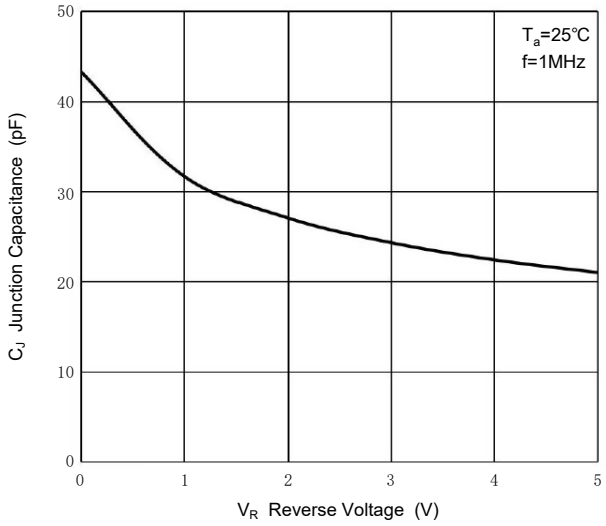


ESDU12VADB



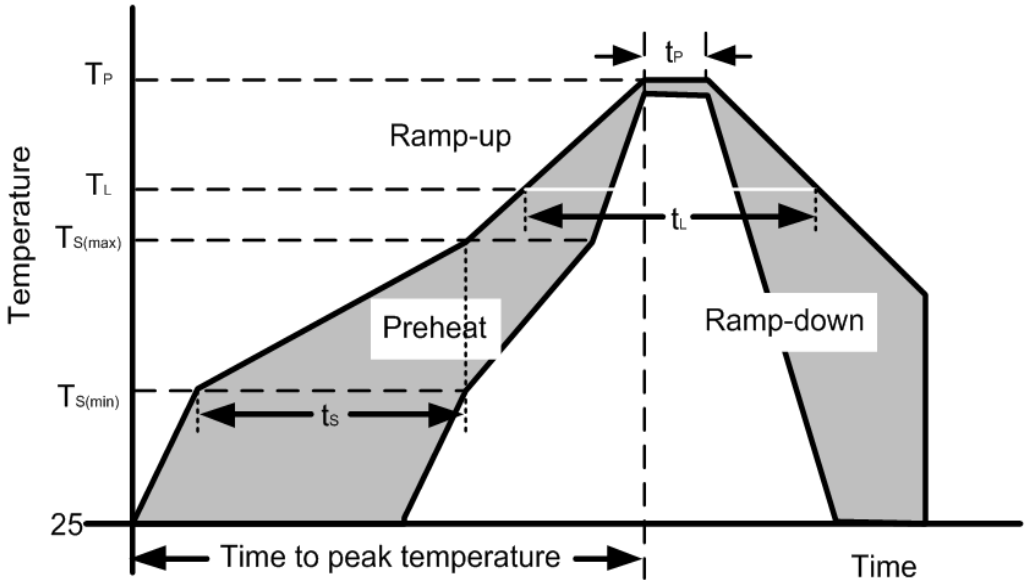






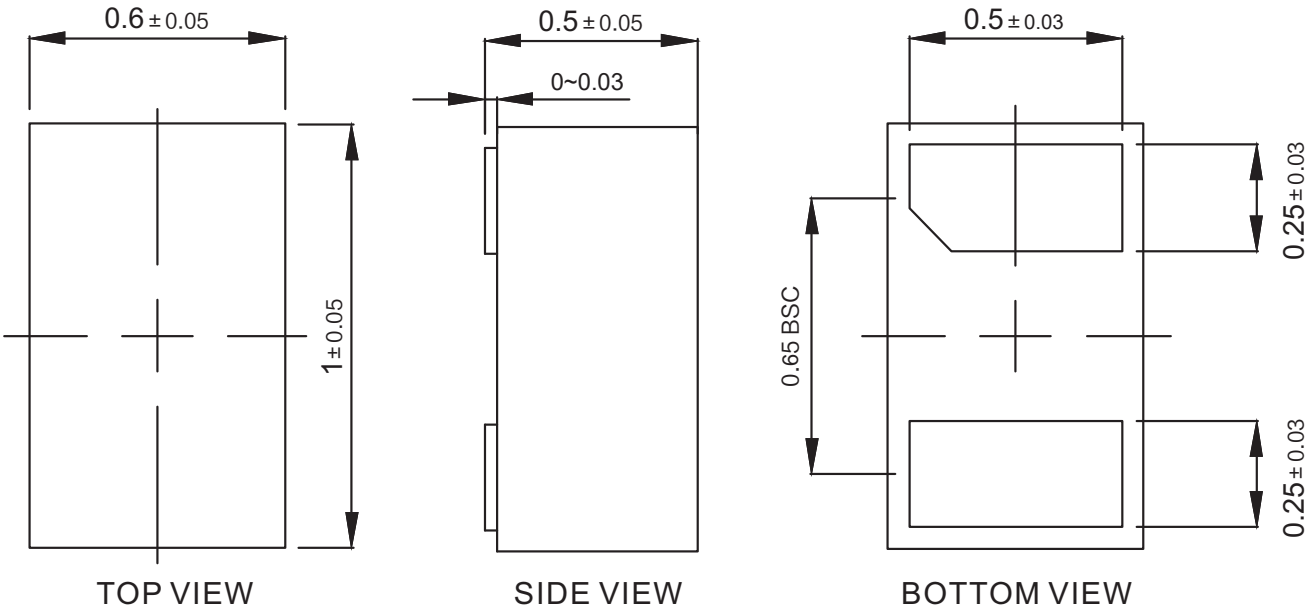
Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (min to max) (ts)	60 – 190 secs
Average ramp up rate (Liquidus Temp) (TL) to peak		5°C/second max
TS(max) to TL——Ramp-up Rate		5°C/second max
Reflow	Temperature (TL) (Liquidus)	217°C
	Temperature (tL)	60 – 150 seconds
Peak Temperature (TP)		260+0/-5 °C
Time within actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max.
Do not exceed		280°C



Outline Drawing – DFNx0.6-2L-0011

Dimensions in mm

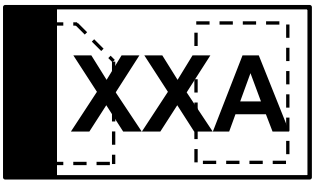


Package Information

Package Type	Description	Quantity（pcs）	Standard
DFNx0.6-2L-0011	Tape & Reel -7″ tape	10000	EIA-481

Part Marking System

Marking Code



Top View

Device	ESDU3V3ADB	ESDU5V0ADB	ESDU12VADB
Marking Code	33A	50A	12A

Contact Information

TANI website: **http://www.tanisemi.com** Email:tani@tanisemi.com

For additional information, please contact your local Sales Representative.

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Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up -to- date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

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The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. TANI shall assume no responsibility for any consequences resulting from such usage.

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