

## 1. Features

- Ultra-Low capacitance:0.5pF(typ.)
- Reverse stand-off voltage:5V
- IEC 61000-4-2 (Air): ±20KV  
IEC 61000-4-2 (Contact): ±15KV

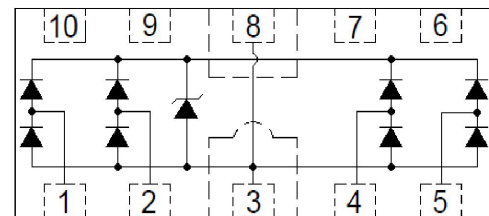
## 2. Pin Description



## 3. Applications

- USB 3.0, USB 2.0
- HDMI 1.3/1.4, Display Port 1.3, eSATA
- Unified Display Interface (UDI)
- Digital Visual Interface (DVI)
- High speed serial interfaces

## 4. Schematic Diagram



Top View

## 5. Order Information

Type	Package	Size (mm)	Delivery Form	Delivery Quantity
MKT642U05	DFN2510	2.50x1.00x0.50	7" T&R	3,000

## 6. Limiting Values( $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

Symbol	Parameter	Conditions	Min	Max	Unit
$V_{ESD}$	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	±15	kV
		IEC 61000-4-2; Air Discharge	-	±20	kV
$I_{PPM}$	Rated Peak Pulse Current	$t_p = 8/20\ \mu\text{s}$	-	5	A
$T_A$	Ambient Temperature Range	-	-55	125	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-	-55	150	$^\circ\text{C}$

**7. Electrical Characteristics( $T_A = 25^\circ\text{C}$  unless otherwise specified)**

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
$V_{RWM}$	Reverse Working Voltage	$T_A = 25^\circ\text{C}$	-	-	5	V
$V_{BR}$	Breakdown Voltage	$I_R = 1\text{ mA}; T_A = 25^\circ\text{C}$	6	-	-	V
$I_R$	Reverse Leakage Current	$V_{RWM} = 5\text{V}; T_A = 25^\circ\text{C}$	-	-	1	$\mu\text{A}$
$V_C$	Clamping Voltage	$I_{PP} = 1\text{A}, t_P = 8/20\mu\text{s}$ , Any I/O to GND, Positive	-	8.5	12	V
		$I_{PP} = 5\text{A}, t_P = 8/20\mu\text{s}$ , Any I/O to GND, Positive	-	12	16	V
$C_L$	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{ MHz}, \text{I/O to I/O}$	-	0.3	0.4	pF
		$V_R = 0\text{V}, f = 1\text{ MHz}, \text{I/O to GND}$	-	0.5	0.8	pF

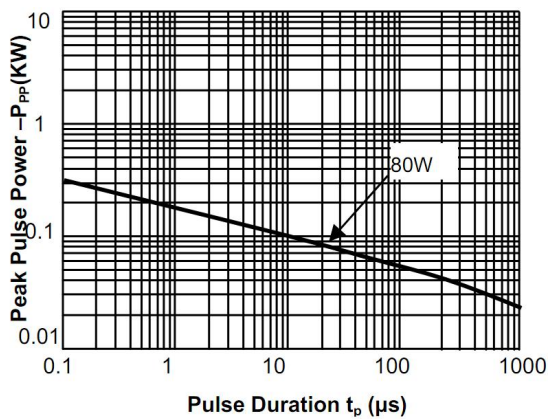
**8. Typical Characteristics**


Fig.1 Peak Pulse Power Rating Curve

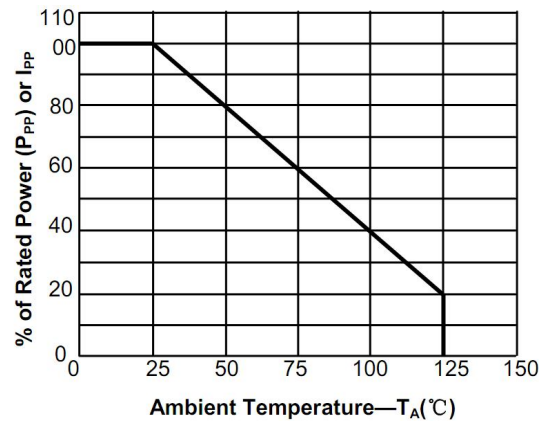


Fig.2 Pulse Derating Curve

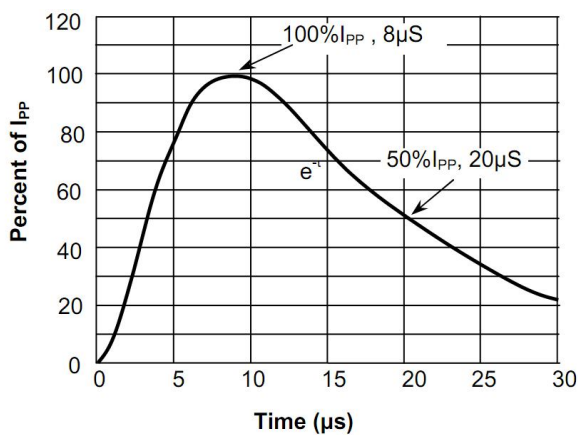
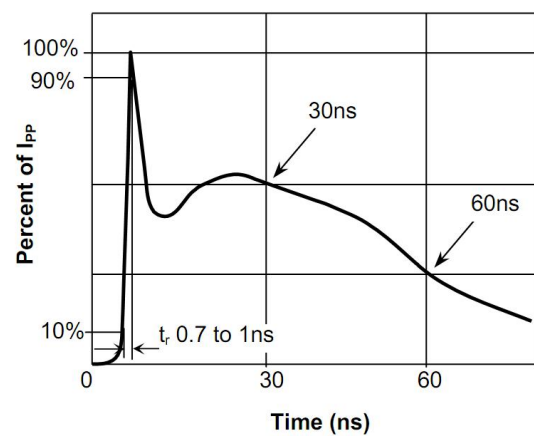
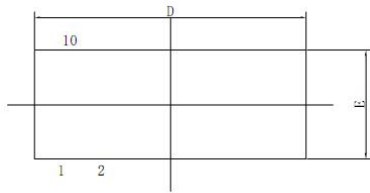

 Fig.3 Pulse Waveform-8/20 $\mu\text{s}$ 


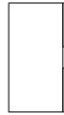
Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

## 9. Package Dimension

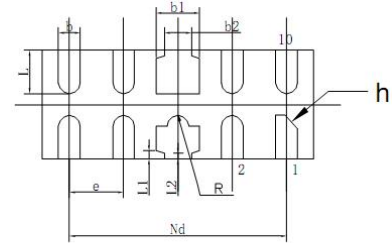
### DFN2510 Package Outline



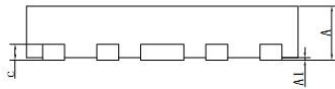
Top View



Side View

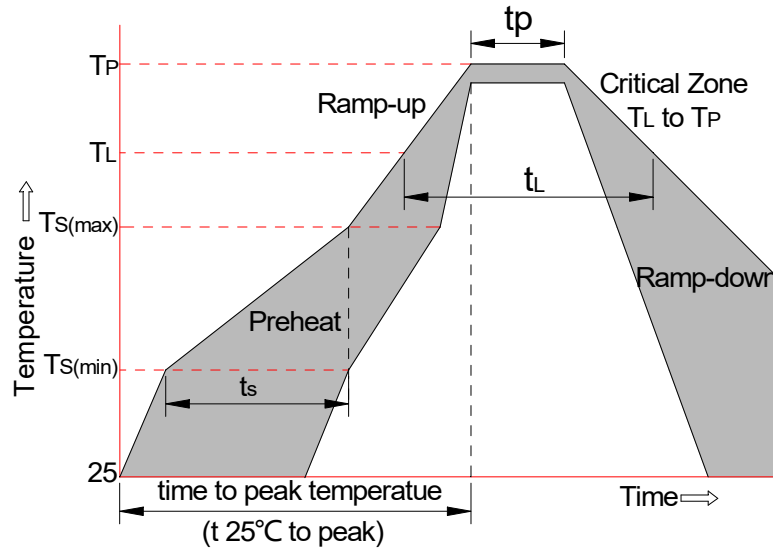


BottomView



Symbol	Dimensions in millimeters		
	Min	Nom	Max
<b>A</b>	0.45	0.50	0.55
<b>A1</b>	-	0.02	0.05
<b>b</b>	0.15	0.20	0.25
<b>b1</b>	0.35	0.40	0.45
<b>b2</b>	0.20	0.25	0.30
<b>c</b>	0.10	0.15	0.20
<b>D</b>	2.45	2.50	2.55
<b>e</b>	0.50BSC		
<b>Nd</b>	2.00 BSC		
<b>E</b>	0.95	1.00	1.05
<b>L</b>	0.35	0.40	0.45
<b>L1</b>	0.075 REF		
<b>L2</b>	0.05 REF		
<b>h</b>	0.08	0.12	0.15
<b>R</b>	0.05	0.10	0.15

## 10. Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) ( $t_s$ )	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C

## 11. Contact Information

Online product information is available at [www.mkfounder.com](http://www.mkfounder.com)

Buy our products or get free samples, for further information and requests,

e-mail us at: [sales@mkfounder.com](mailto:sales@mkfounder.com)

## 12. Copyrights & Disclaimer

Copyright MK Founder, trademarks Registered. All rights reserved. The material herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner.

Devices sold by MK Founder are covered by the warranty and patent indemnification provisions appearing in its General Terms of Trade. MK Founder makes no warranty, express, statutory, implied, or by description regarding the information set forth herein.

MK Founder reserves the right to change specifications and prices at any time and without notice. Therefore, prior to designing this product into a system, it is necessary to check with MK Founder for current information.

This product is intended for use in commercial applications.

Applications requiring extended temperature range, unusual environmental requirements, or high reliability applications, such as military, medical life-support or life-sustaining equipment are specifically not recommended without additional processing by MK Founder for each application.

This product is provided by MK Founder "AS IS" and any express or implied warranties, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose are disclaimed.

MK Founder shall not be liable to recipient or any third party for any damages, including but not limited to personal injury, property damage, loss of profits, loss of use, interruption of business or indirect, special, incidental or consequential damages, of any kind, in connection with or arising out of the furnishing, performance or use of the technical data herein. No obligation or liability to recipient or any third party shall arise or flow out of MK Founder rendering of technical or other services.

## 13. Reversion History

Document ID	Release Date	Sheet Status	Change Notice	Supersedes
0.1	08-Mar-2018	Product data sheet	-	-
0.2	11-Jun-2018		Change I <sub>PP</sub> 、P <sub>PP</sub>	

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:*

*Click to view products by [Mk](#) manufacturer:*

Other Similar products are found below :

[NTE4902](#) [P4SMAJ15A](#) [P4SMAJ26A](#) [SMAJ400CA-TP](#) [TGL34-47CA](#) [ESDAULC45-1BF4](#) [SM1605E3/TR13](#) [SMF20A-TP](#) [P4SMAJ12A](#)  
[CPDUR24V-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [MPLAD30KP45CAE3](#) [MMBZ27VCLQ-7-F](#) [MMAD1108/TR13](#) [MPLAD30KP24A](#)  
[ACPDQC5V0R-HF](#) [DFLT170A-7](#) [NTE4900](#) [NTE4926](#) [NTE4938](#) [SMF22A-TP](#) [SMF12A-TP](#) [SLVU2.8-TP](#) [SMLJ6.5CA-TP](#) [SMAJ6.5CA-](#)  
[TP](#) [MMAD1108E3/TR13](#) [D5V0M1U2LP3-7](#) [SMAJ400A-TP](#) [AOZ8811DT-03](#) [AOZ8831DI-05](#) [AOZ8831DT-03](#) [SMAJ188CA](#) [3SMC33CA](#)  
[BK](#) [CPDQC3V3C-HF](#) [CPDQC12VE-HF](#) [MPLAD30KP170CA](#) [82357120100](#) [5.0SMLJ15CA-TP](#) [5KP18A-TP](#) [P6KE8.2A-TP](#)  
[MPLAD30KP43CAE3](#) [SMAJ43A-TP](#) [D5V0F6U8LP33-7](#) [TVS5501V10MUT5G](#) [5.0SMLJ24CA-TP](#) [SMAJ110CA-TP](#) [MPLAD15KP75CAE3](#)  
[MMAD1103e3/TR13](#) [DFLT40AQ-7](#)