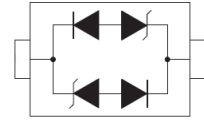


Features

- 350 Watts peak pulse power ($t_p = 8/20\mu s$)
- Replacement for MLV (0805)
- Protects One Power or I/O Port
- Low clamping voltage
- Working voltage: $V_{RWM} = 3V, 5V, 8V, 12V, 15V, 24V, 36V$
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF



Typical Applications

- Ethernet - 10/100/1000 Base T
- Cellular Phones
- Handheld - Wireless Systems
- Personal Digital Assistant (PDA)
- USB Interface



Mechanical Data

- Case: SOD-323
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

SOD-323

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TDLC03C	SOD-323	3000 pcs / Tape & Reel	03C
TDLC05C	SOD-323	3000 pcs / Tape & Reel	C05C
TDLC08C	SOD-323	3000 pcs / Tape & Reel	8C
TDLC12C	SOD-323	3000 pcs / Tape & Reel	2C
TDLC15C	SOD-323	3000 pcs / Tape & Reel	6C
TDLC24C	SOD-323	3000 pcs / Tape & Reel	4C
TDLC36C	SOD-323	3000 pcs / Tape & Reel	36C

Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
IEC 61000-4-2; ESD (Air)	V_{ESD-A}	± 30	kV
IEC 61000-4-2; ESD (Contact)	V_{ESD-C}	± 30	kV
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	350	W

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	460	°C/W
Thermal Resistance Junction-to-Case ^{*1}	R _{θJC}	290	°C/W
Thermal Resistance Junction-to-Lead ^{*1}	R _{θJL}	310	°C/W
Junction Temperature	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a minimum recommended FR-4 board

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
TDLC03C TVS for 3V Lines						
Reverse Stand-off Voltage	V _{RWM}		-	-	3.3	V
Reverse Breakdown Voltage	V _(BR)	I _T = 1mA	4	-	-	V
Reverse Leakage Current	I _R	V _{RWM} = 3.3V	-	-	0.2	μA
Clamping Voltage	V _C	I _{PP} = 1A, tp = 8/20μs	-	-	7	V
		I _{PP} = 20A, tp = 8/20μs	-	-	19	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHZ	-	1	-	pF
TDLC05C TVS for 5V Lines						
Reverse Stand-off Voltage	V _{RWM}		-	-	5	V
Reverse Breakdown Voltage	V _(BR)	I _T = 1mA	6	-	-	V
Reverse Leakage Current	I _R	V _{RWM} = 5V	-	-	0.2	μA
Clamping Voltage	V _C	I _{PP} = 1A, tp = 8/20μs	-	-	9.8	V
		I _{PP} = 20A, tp = 8/20μs	-	-	20	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHZ	-	1	-	pF
TDLC08C TVS for 8V Lines						
Reverse Stand-off Voltage	V _{RWM}		-	-	8	V
Reverse Breakdown Voltage	V _(BR)	I _T = 1mA	8.5	-	-	V
Reverse Leakage Current	I _R	V _{RWM} = 8V	-	-	0.2	μA
Clamping Voltage	V _C	I _{PP} = 1A, tp = 8/20μs	-	-	13.4	V
		I _{PP} = 17A, tp = 8/20μs	-	-	18.5	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHZ	-	1	-	pF

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
TDLC12C TVS for 12V Lines						
Reverse Stand-off Voltage	V_{RWM}		-	-	12	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1mA$	13.3	-	-	V
Reverse Leakage Current	I_R	$V_{RWM} = 12V$	-	-	0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20\mu s$	-	-	19	V
		$I_{PP} = 11A, t_p = 8/20\mu s$	-	-	28.6	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$	-	1	-	pF
TDLC15C TVS for 15V Lines						
Reverse Stand-off Voltage	V_{RWM}		-	-	15	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1mA$	16.7	-	-	V
Reverse Leakage Current	I_R	$V_{RWM} = 15V$	-	-	0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20\mu s$	-	-	24	V
		$I_{PP} = 10A, t_p = 8/20\mu s$	-	-	31.8	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$	-	1	-	pF
TDLC24C TVS for 24V Lines						
Reverse Stand-off Voltage	V_{RWM}		-	-	24	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1mA$	26.7	-	-	V
Reverse Leakage Current	I_R	$V_{RWM} = 24V$	-	-	0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20\mu s$	-	-	43	V
		$I_{PP} = 6A, t_p = 8/20\mu s$	-	-	56	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$	-	1	-	pF
TDLC36C TVS for 36V Lines						
Reverse Stand-off Voltage	V_{RWM}		-	-	36	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1mA$	40	-	-	V
Reverse Leakage Current	I_R	$V_{RWM} = 36V$	-	-	0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20\mu s$	-	-	48	V
		$I_{PP} = 4A, t_p = 8/20\mu s$	-	-	90	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$	-	1.5	-	pF

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

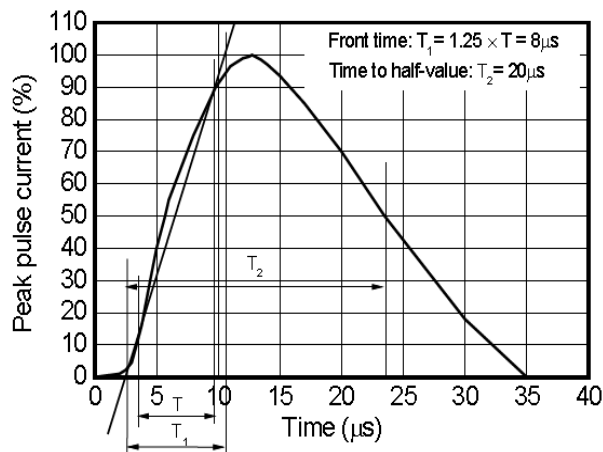


Fig 1 8/20 μs waveform per IEC61000-4-5

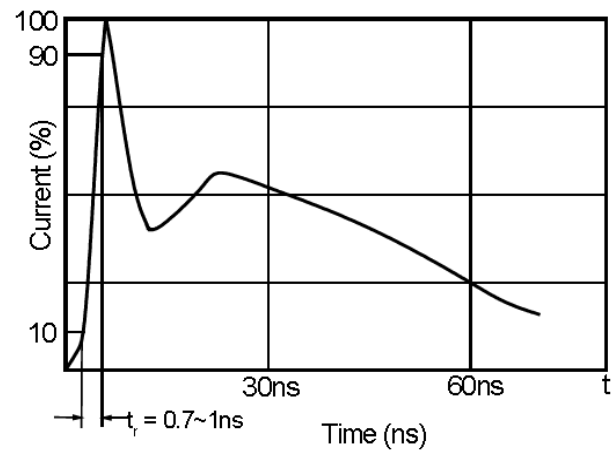


Fig 2 ESD pulse waveform according to IEC61000-4-2

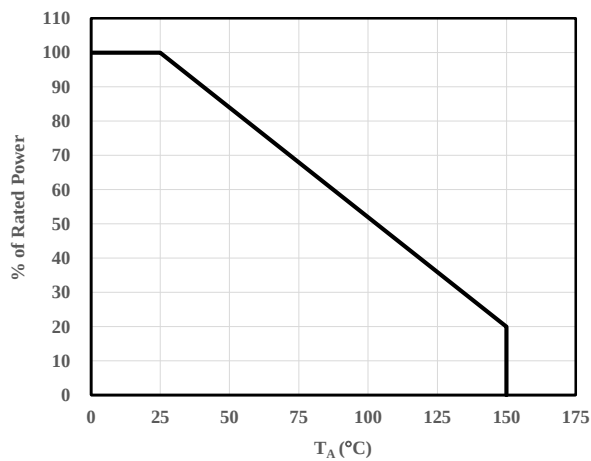
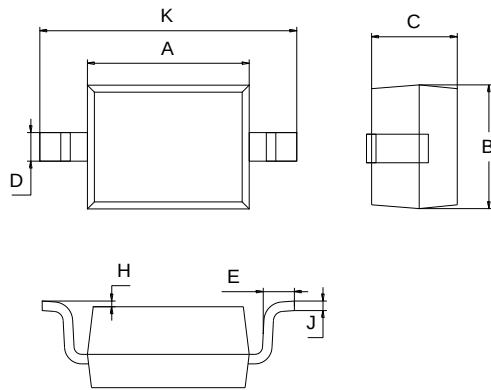


Fig 3 Power Derating Curve

Package Outline Dimensions (Unit: mm)



SOD-323		
Dimension	Min.	Max.
A	1.60	1.80
B	1.20	1.40
C	0.80	0.90
D	0.25	0.35
E	0.22	0.42
H	0.02	0.10
J	0.05	0.15
K	2.55	2.75

Package Outline Dimensions (Unit: mm)

SOD-323

