



Single-Line ESD Protection Device



DFN1608 (0603)

DESCRIPTION

- ◆ The ESDHR5V0B is an ESD transient voltage suppression component which provides a very high level of protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD).
- ◆ It is particularly well-suited for cellular phones, portable device, digital cameras, power supplies and many other portable applications because of its small package and low weight.
- ◆ The ESDHR5V0B is Bi-directional; Safely dissipate ESD strikes of Level 4, IEC61000-4-2, exceeding the maximum requirement.
- ◆ Using the MILSTD-883 (Method 3015) specification for Human Body Model (HBM) ESD, the device provides protection for contact discharges to greater than +/-10KV.

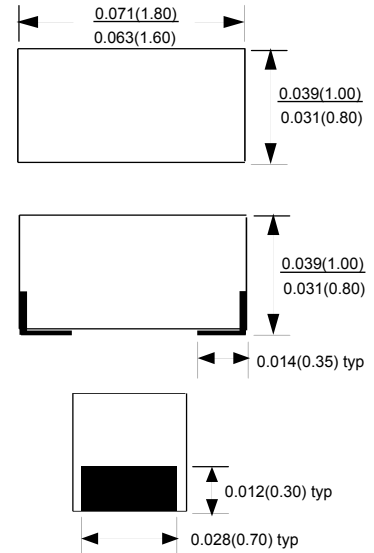
FEATURES

- ◆ Transient protection for data lines to IEC 61000-4-2 (ESD)
 - ±15kV (air)
 - ±8kV (contact)
- IEC 61000-4-4 (EFT)
 - 40A (5/50ns)
- ◆ Protects single I/O lines
- ◆ Working voltage: 5V
- ◆ Low leakage current
- ◆ Low operating and clamping voltages

APPLICATIONS

- ◆ Cellular Handsets and Accessories
- ◆ Cordless Phone
- ◆ PDA
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ MP3 Player

PACKAGE OUTLINE



Unit : Inch (mm)

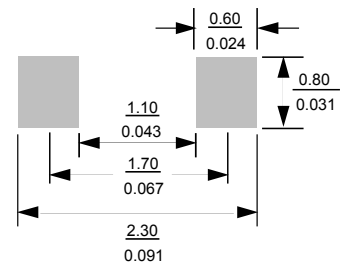
PIN CONFIGURATION



PART MARKING



Suggested Pad Layout



Unit : mm / Inch



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ABSOLUTE MAXIMUM RATINGS

($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Peak Pulse Power ($t_p = 8/20 \mu\text{s}$)	Ppk	75	W
Maximum Peak Pulse Current ($t_p = 8/20 \mu\text{s}$)	Ipp	1	A
ESD per IEC 61000 – 4 – 2 (Air)	Vpp	± 15	KV
ESD per IEC 61000 – 4 – 2 (Contact)	Vpp	± 8	KV
Operating Junction Temperature	Tj	-55 ~ 125	$^{\circ}\text{C}$
Storage Temperature Range	TSTG	-55 ~ 150	$^{\circ}\text{C}$
Lead Soldering Temperature	TL	260 (10sec)	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Reverse Stand – Off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1\text{mA}$	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$, $T=25^{\circ}\text{C}$			2	μA
Clamping Voltage	V_C	$I_{pp} = 1\text{A}$, $t_p = 8/20 \mu\text{s}$			9	V
Junction Capacitance	C_j	Between I/O Pin and GND $V_R = 0\text{V}$, $f = 1\text{MHz}$		15	20	pF

ORDERING INFORMATION

Part Number	Package	Part Marking
ESDHR5V0B	DFN1608 (0603)	E05



TYPICAL CHARACTERISTICS

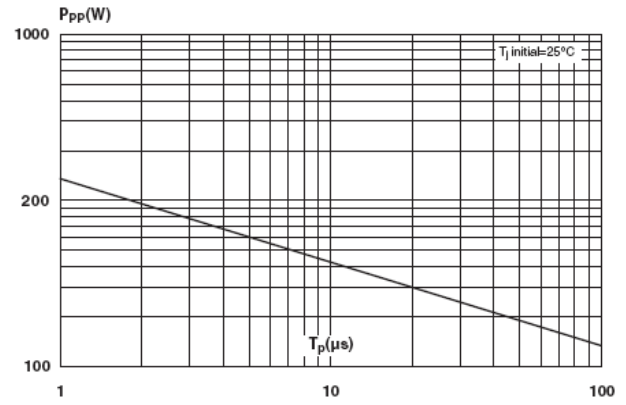
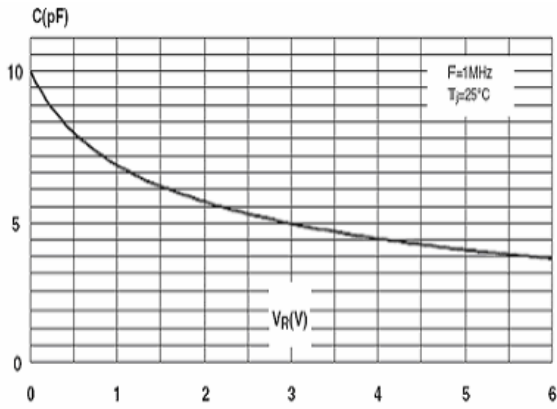


Fig 1 : Junction Capacitance V.S Reverse Voltage Applied

Fig 2 : Peak Plus Power V.S Exponential Plus Duration

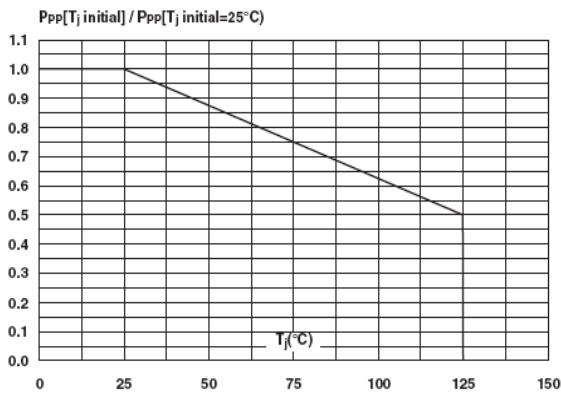


Fig 3 : Relative Variation of Peak Plus Power V.S Initial Junction Temperature

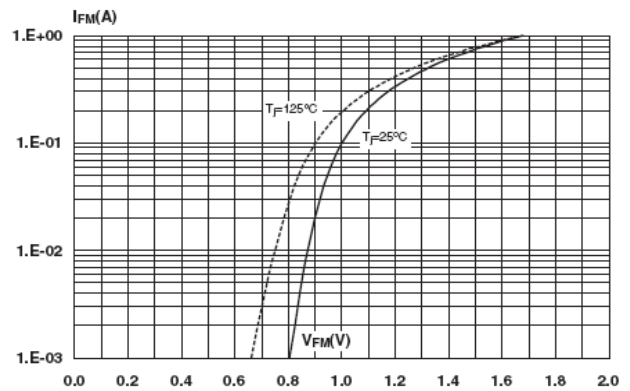


Fig 4 : Forward Voltage Drop V.S Peak Forward Current