ESD5302F

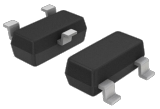
ESD Protection Diode

Features

60 Watts peak pulse power (tp = 8/20μs)
Bidirectional and unidirectional configurations
Solid-state silicon-avalanche technology
Low clamping voltage
Low leakage current
Low capacitance (C_j=0.25 pF typ.)
Protection two data lines:
IEC 61000-4-2 ±25V contact ±25kV air
IEC 61000-4-4 (EFT) 40A (5/50ns)
IEC 61000-4-5 (Lightning) 4A (8/20μs)

Applications

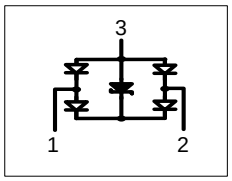
Dataline
Automatic Teller Machines
Net works
Power line

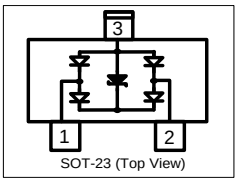


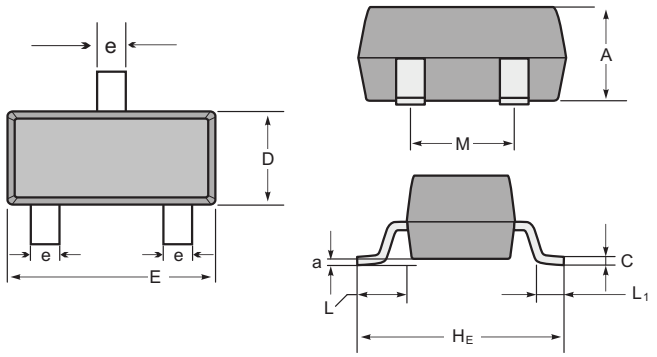
Mechanical Data

SOT-23 package
Molding compound flammability rating: UL 94V-0
Packaging: Tape and Reel
RoHS/WEEE Compliant

Schematic & PIN Configuration







SOT-23 mechanical data

UNIT		A	C	D	E	HE	e	M	L	L1	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_p =8/20μs)	P_{PP}	60	Watts
Peak Pulse Current (t_p =8/20μs) (note1)	I_{pp}	4.0	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	20 20	kV
Lead Soldering Temperature	T_L	260(10seconds)	℃
Junction Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{stg}	-55 to + 125	℃

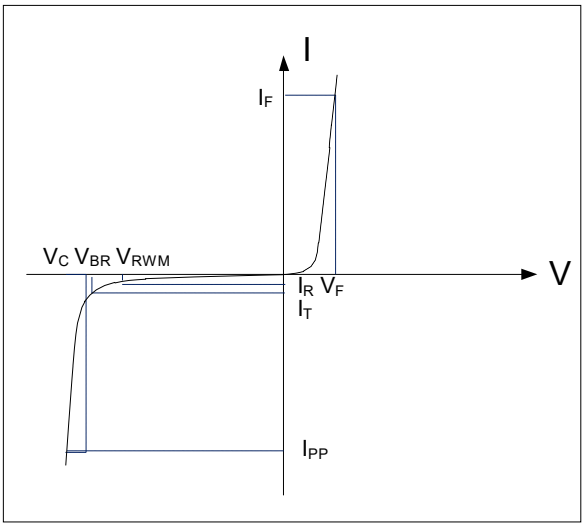
ESD5302F

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max	Units
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,T=25℃			0.1	μA
Peak Pulse Current	I_{PP}	tp =8/20μs			4.0	A
Clamping Voltage	V_C	I_{PP}=4.0A,t_p=8/20μs		13		V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz		0.65		pF

Electrical Parameters (TA = 25°C unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



Note:. 8/20μs pulse waveform.

RATING AND CHARACTERISTIC CURVES (ESD5302F)

Figure 1: Peak Pulse Power vs. Pulse Time

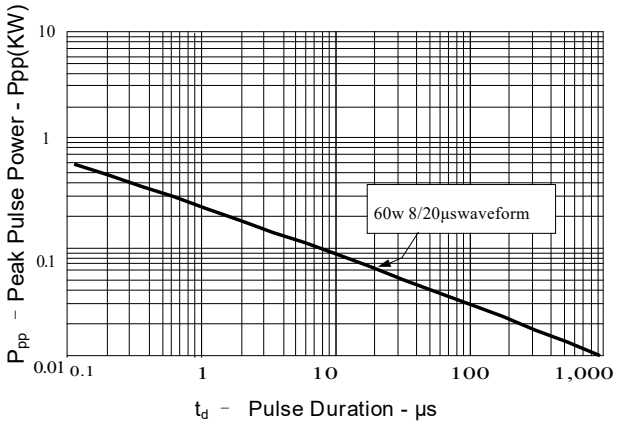


Figure 2: Power Derating Curve

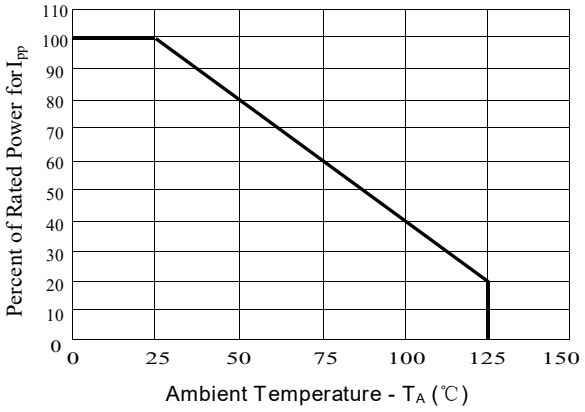


Figure3: Pulse Waveform

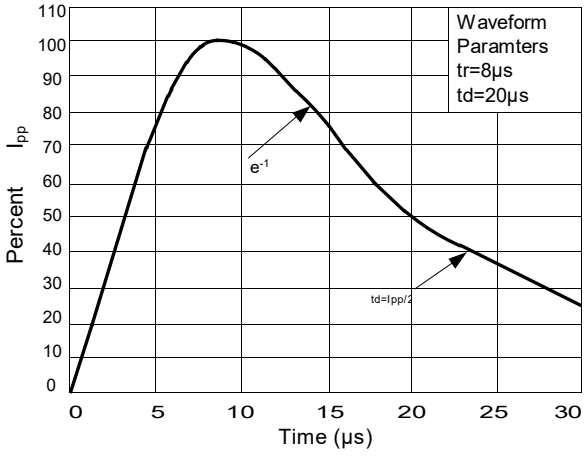


Figure 4: Clamping Voltage vs.Ipp