Innovative Service Around the Globe YAGEO

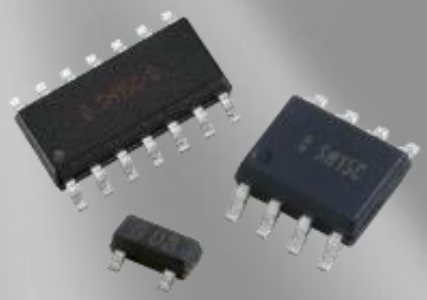
DATA SHEET

ELECTROSTATIC DISCHARGE PROTECTION DEVICES

INDUSTRIAL / CONSUMER

UES08A03L05

RoHS compliant & Halogen free



Product specification– March 28, 2021 V.2

Electrostatic Discharged Protection Devices (ESD) Data Sheet

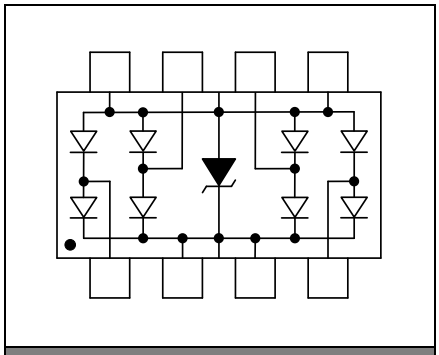
Description

Brightking's UES08A03L05 component is surge rated diode array designed to protect high speed data line interfaces. It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by electrostatic discharge (ESD), electrical fast transients (EFT), and lightning. The unique design of this device incorporates surge rated, low capacitance steering diodes and TVS diodes in a single package. During transient conditions, the steering diodes direct the transient either the position side of the power supply or to the ground.

Contact : ±30kV
Air : ±30kV

Features

- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance
- SOIC-08 surface mount package
- Protects four I/O lines and one power line
- Working voltage: 3.3V
- Low leakage current
- Low capacitance and clamping voltage
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270℃
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking: B A035



Pin Configuration

Applications

- Ethernet 10/100/ base T
- Firewire & USB protection
- Set Top Box (STB) protection
- Video card (DVI) protection
- T1/E1 secondary IC side protection
- T3/E3 secondary IC side protection
- HDSL secondary IC side protection
- IC bus protection
- Micro-controller line protection

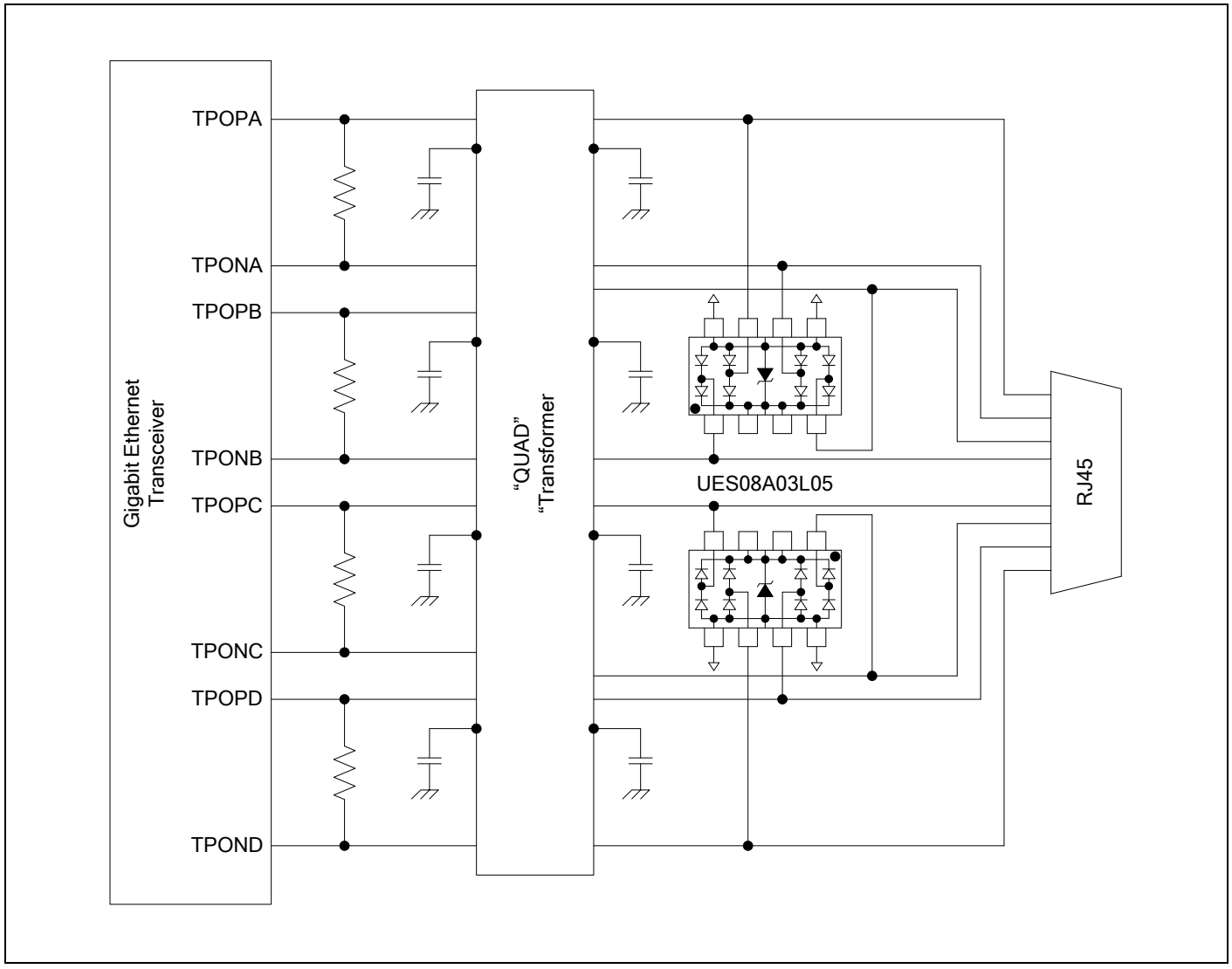
Maximum Ratings

Rating	Symbol	Value	Unit
ESD voltage (Contact discharge)	V_{ESD}	±30	kV
ESD voltage (Air discharge)		±30	
Storage & operating temperature range	T_{STG} ,T_J	-55~+150	℃

Electrical Characteristics (T_J=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				3.3	V
Reverse breakdown voltage	V_{BR}	I_{BR}=1mA	3.5			V
Reverse leakage current	I_R	V_R=3.3V Each I/O pin			1	μA
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=1A		7.5		V
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=5A		9.8		V
Clamping voltage (tp=8/20μs)	V_C	I_{PP}=25A		25		V
Peak pulse current (tp=8/20μs)	I_{PP}				25	A
Off state junction capacitance	C_J	0Vdc,f=1MHz Between I/O pins and GND			5	pF

Applications Information



Typical Characteristics Curves

Figure 1. Pulse Waveforms

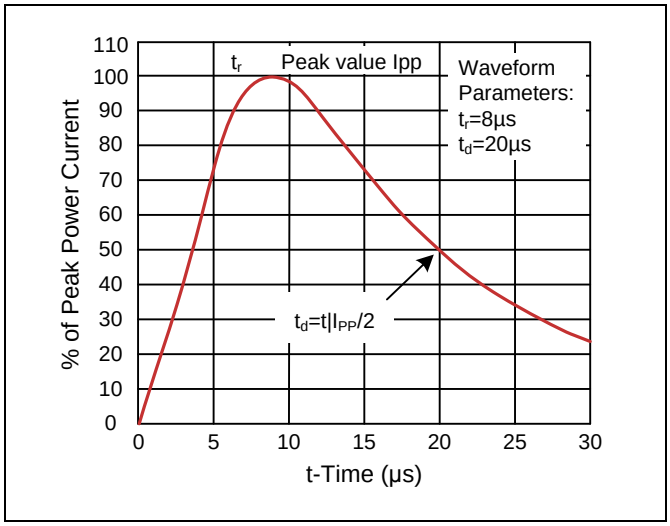


Figure 2. Clamping Voltage vs. Peak Pulse Current

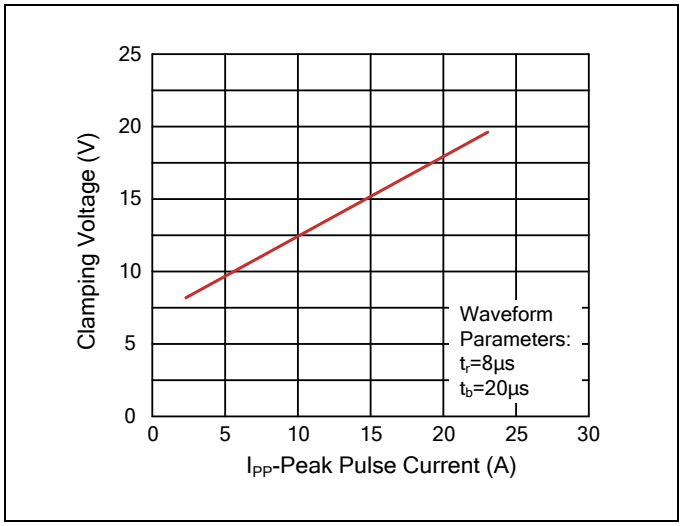
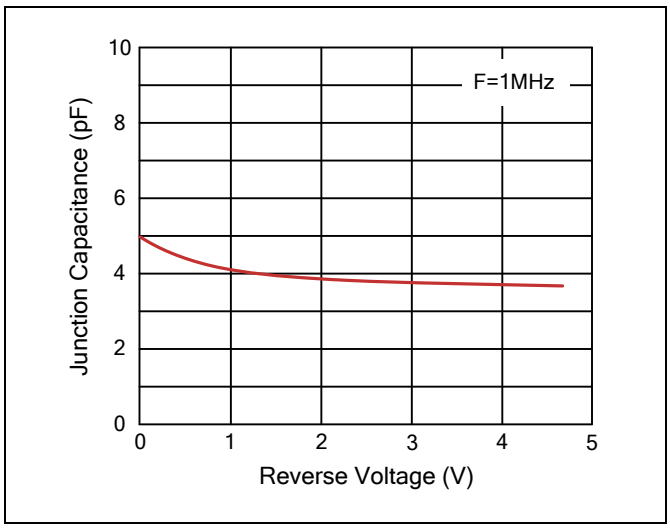
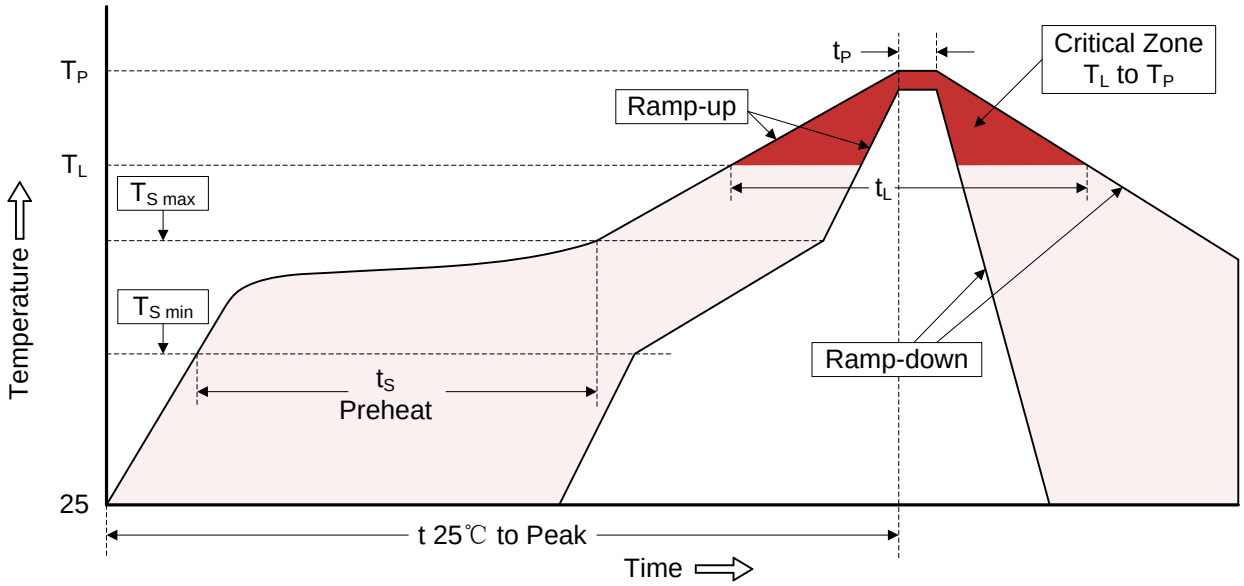


Figure 3. Capacitance vs. Reverse Voltage



Recommended Soldering Conditions

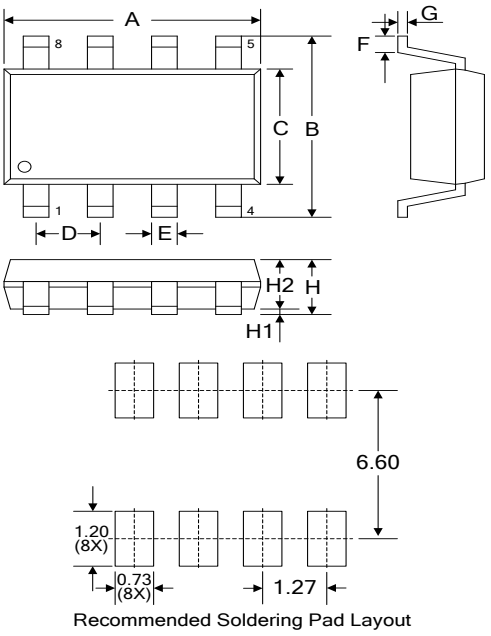
Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (ts)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

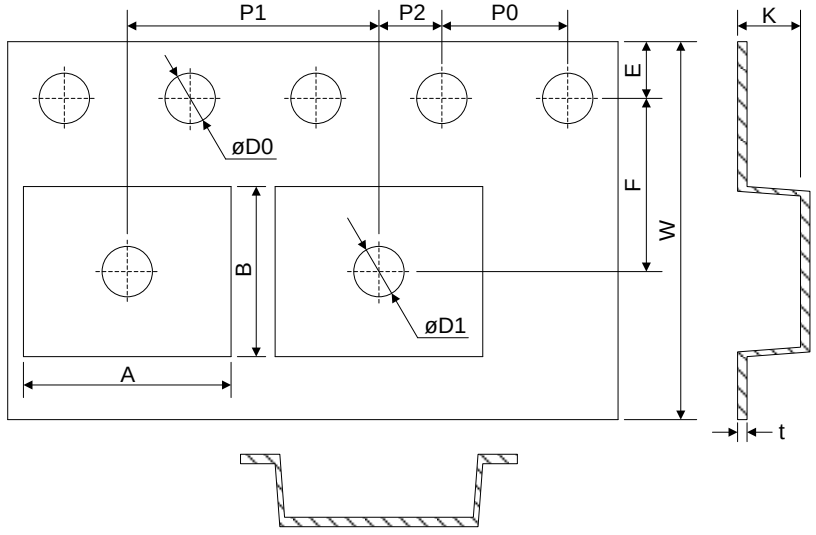
Dimensions (SOIC-08)



Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.80	5.00	0.189	0.197
B	5.80	6.20	0.228	0.244
C	3.80	4.00	0.150	0.157
D	1.27		0.050	
E	0.33	0.51	0.013	0.020
F	0.40	1.27	0.016	0.050
G	0.19	0.25	0.007	0.010
H	1.35	1.75	0.053	0.069
H1	0.10	0.25	0.004	0.010
H2	1.45		0.057	

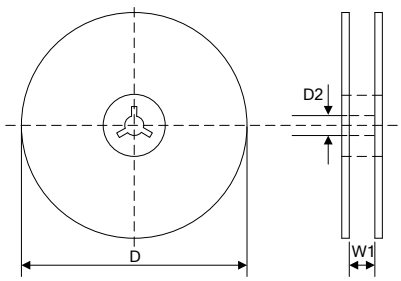
Packaging

Tape



Symbol	Dimension (mm)
W	12.00±0.30
P0	4.00±0.10
P1	8.00±0.10
P2	2.00±0.10
D0	Φ1.55±0.10
D1	Φ1.55±0.05
E	1.75±0.10
F	5.50±0.10
A	6.50±0.10
B	5.40±0.10
K	2.00±0.10
t	0.30±0.05

Reel



D	Φ330.0±3.0
D2	Φ13.0
W1	13.5
Quantity: 2500PCS	