

## Silicon Schottky Barrier Diode

### Features

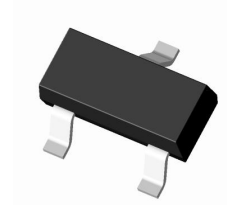
- Small Surface Mounting Type
- Ideal for Automated Placement
- Ultrafast Reverse Recovery Time
- High Current Capability
- Low Forward Voltage Drop
- High Surge Capability
- RoHS Compliant

### Applications

- Rail to rail ESD protection
- Overshoot and undershoot switching control
- Mobile phones and accessories
- Video game consoles connector ports
- Free Wheelin

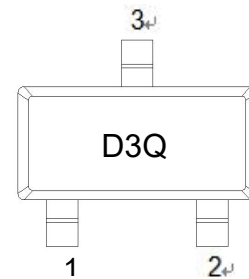
### Mechanical Characteristics

- Package: SOT-23
- Ideal for Automated Placement
- Case Material: "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

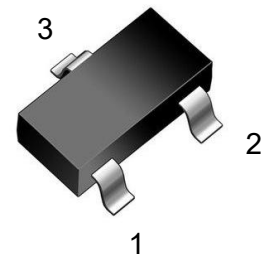


Marking: D3Q

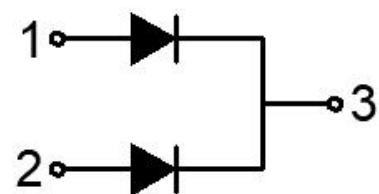
SOT-23



#### Pin definition



#### Equivalent circuit

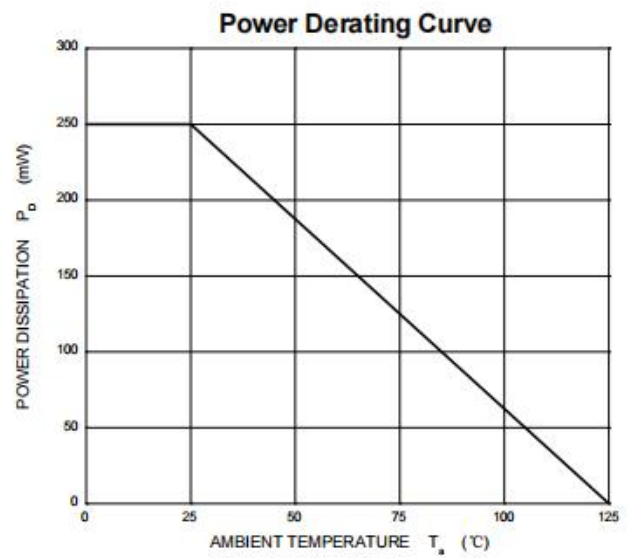
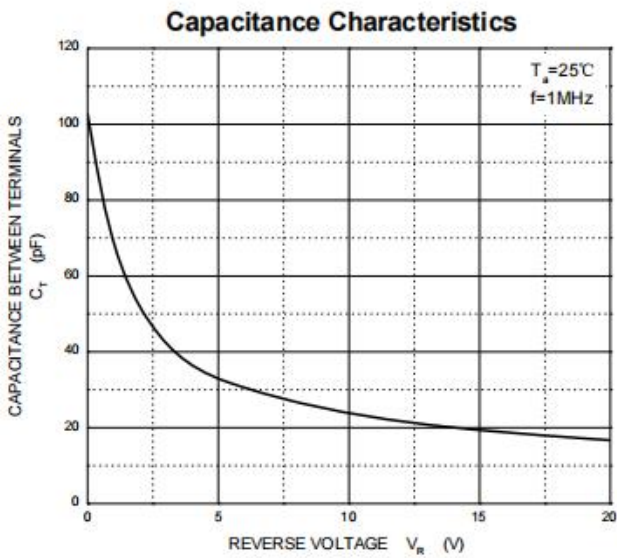
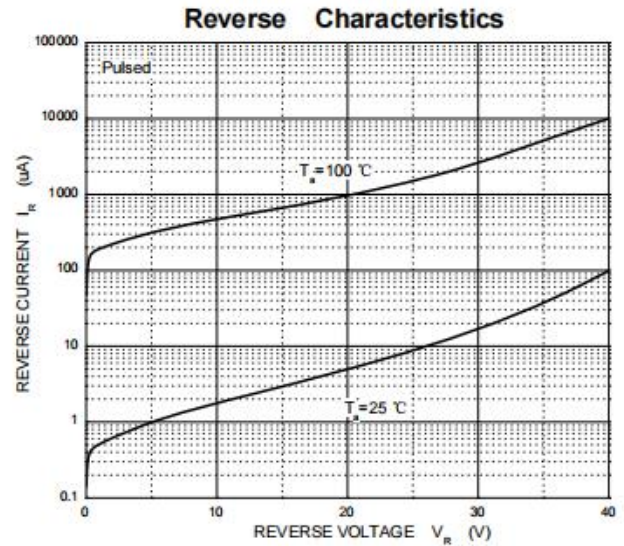
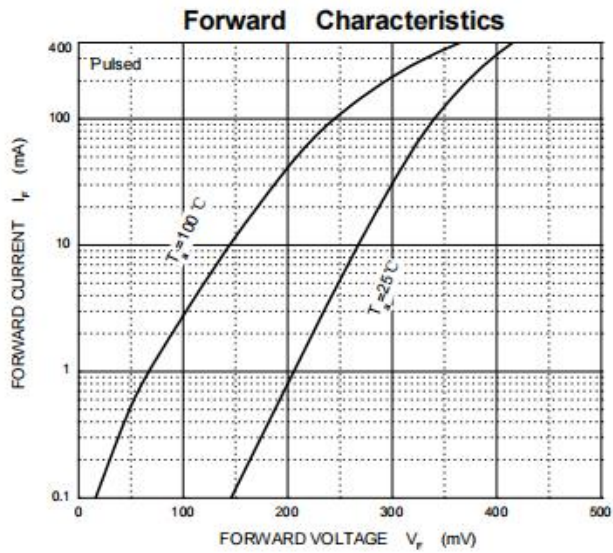


<b>Absolute Maximum Ratings</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)			
Parameter	Symbol	Limit	Unit
Reverse Voltage (Repetitive Peak)	$V_{RRM}$	40	V
Reverse Voltage (RMS)	$V_{R(RMS)}$	40	V
DC reverse voltage	$V_R$	28	V
Continuous Forward Current	$I_o$	400	mA
Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	$I_{FSM}$	2	A
Power Dissipation	$P_D$	250	mW
Thermal Resistance Junction to Ambient (Typ)	$R_{\theta JA}$	400	$^{\circ}\text{C/W}$
Junction Temperature	$T_J$	-55 ~ +125	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^{\circ}\text{C}$

<b>Electrical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Breakdown Voltage	$V_{BR}$	$I_R=100\mu\text{A}$	25			V
Reverse Current	$I_R$	$V_R=25\text{V}$			70	$\mu\text{A}$
Forward Voltage	$V_F$	$I_F=10\text{mA}$			0.33	V
		$I_F=200\text{mA}$			0.56	V

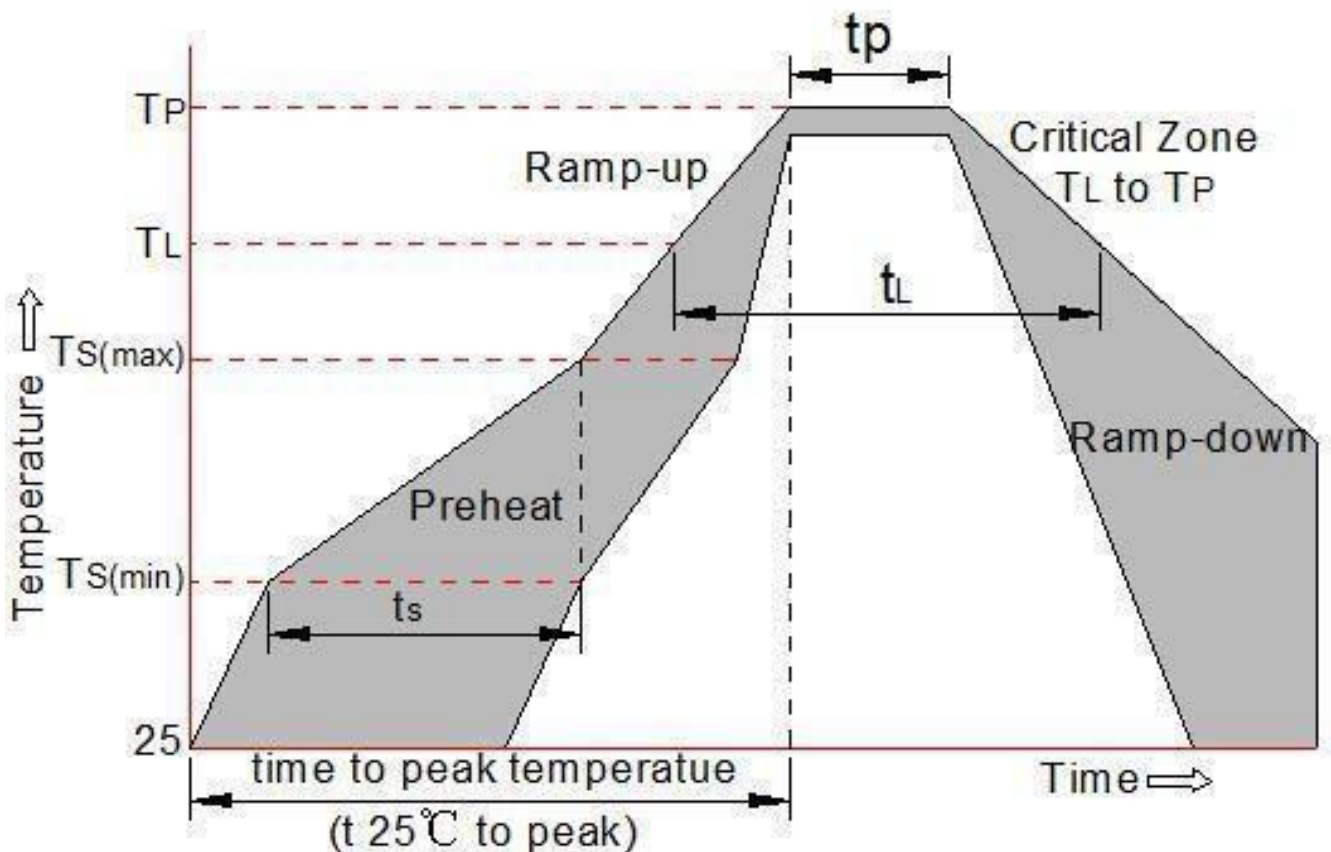
## Ratings and Characteristics Curves

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



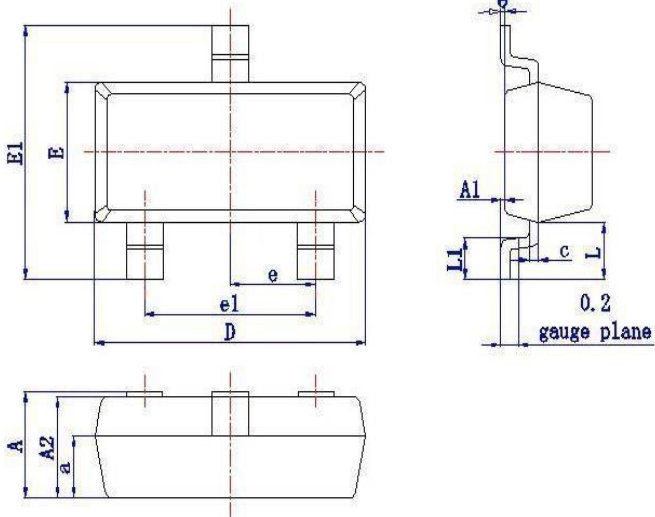
## Soldering Parameters

Reflow Condition		Pb -Free assembly (see as bellow)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150 °C
	-Temperature Max( $T_{s(max)}$ )	+200 °C
	-Time (Min to Max) (ts)	60 -180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3 °C /sec. Max
$T_{s(max)}$ o $T_L$ - 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
Time 25 °C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260 °C



## Package Outline Dimensions

in inches (millimeters)



Symbol	Dimensional	
	Millimeters	
	min	max
A	0.9	1.15
A1	0	0.1
A2	0.9	1.05
a	(0.6)	
D	2.8	3.0
E	1.2	1.4
E1	2.25	2.55
e	(0.95)	
e1	1.8	2.0
b	0.3	0.5
c	0.08	0.15
L	(0.55)	
L1	0.3	0.5
$\theta$	0°	8°

## Revision History

Document Version	Date of release	Description of changes
Rev.A	2022.05.10	First issue

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