

Features

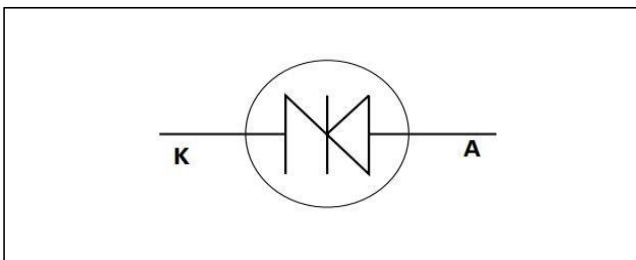
- No degrade after multiple discharge current events.
- Quick switching on performance
- Low on state voltage
- Plastic package is flammability rated V-0 per UL-94
- IEC61000-4-2 +/-30kV both contact and air
- IEC61000-4-4 50A(5/50ns)



Applications

Suitable for capacitor-discharge high voltage generator circuit such like gas stove ignition, water heater ignition etc.

Function Diagram



Characteristics (T =25°C unless otherwise noted)

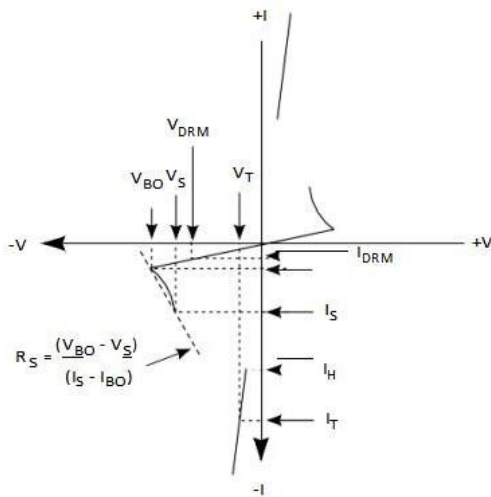
Part Number	Marking	K->A VDRM@5uA (Volts) Min	K->A VBO@10uA (Volts) Min	K->A VBO @10uA (Volts) Max	K->A IH (mA) Min	K->A IH (mA) Max
TT150S1ARP	K150SA	120	142	157	10	80
TT180S1ARP	K180SA	150	170	183	10	80
TT200S1ARP	K200SA	170	190	210	10	80
TT220S1ARP	K220SA	190	210	230	10	80
TT240S1ARP	K240SA	210	230	250	10	80

Part Number	A->K VDRM@5uA (Volts) Min	A->K VBO @10uA (Volts) Min	A->K IH (mA) Min	A->K IH (mA) Max
TT150S1ARP	45	50	10	80
TT180S1ARP	45	50	10	80
TT200S1ARP	45	50	10	80
TT220S1ARP	45	50	10	80
TT240S1ARP	45	50	10	80

Electrical Specification (T = 25°C unless otherwise noted)

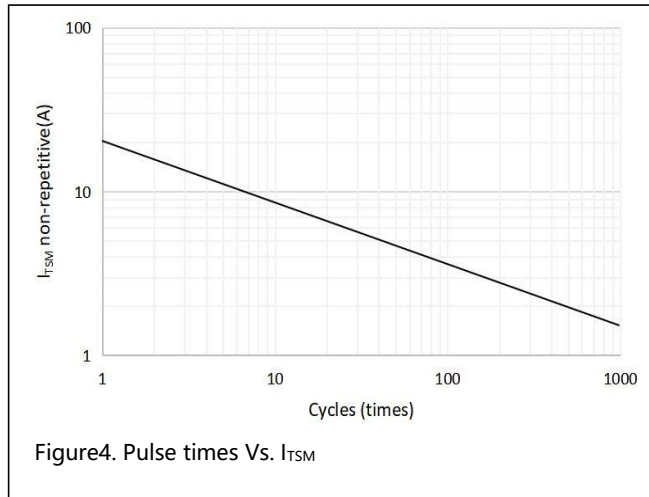
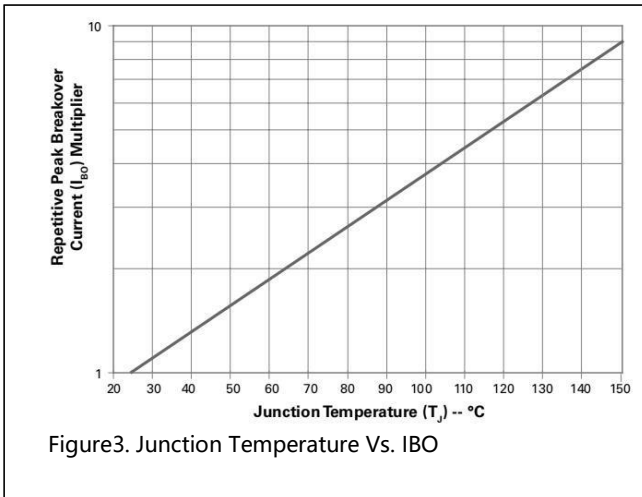
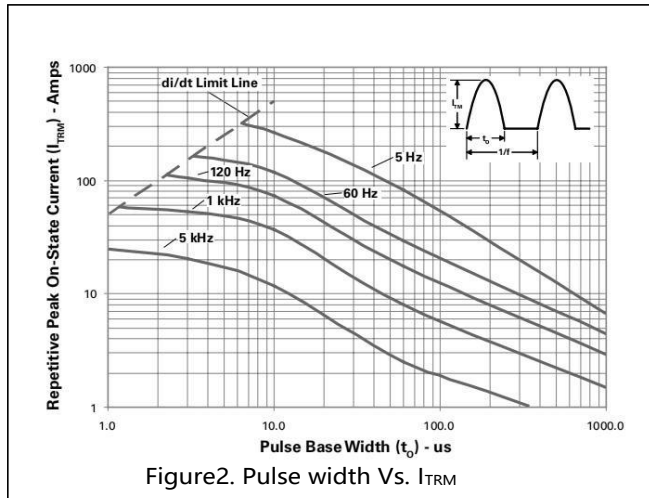
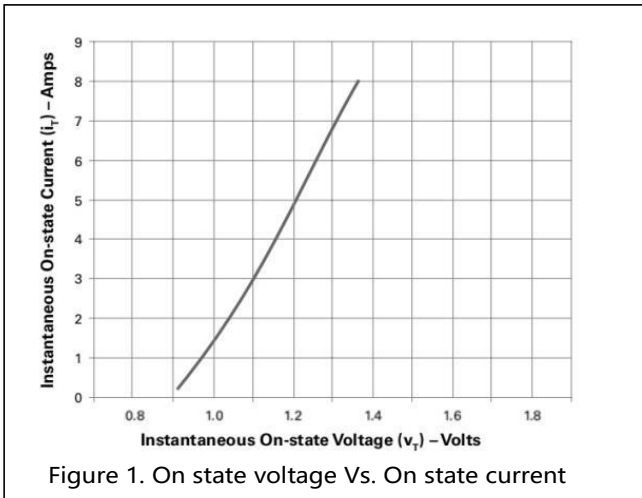
Symbol	Parameters	Test Conditions	Min	Max	Unit
$I_T(RMS)$	On-state RMS Current	50/60Hz		1	A
I_{DRM}	Repetitive Peak Off-state Current	$V = V_{DRM}$ 50/60Hz Sine Wave		5	μA
V_{TM}	Peak On-state Voltage	$I_T = 1A$		1.2	V
R_S	Switching Resistance, $R_S = \frac{(V_{BO} - V_S)}{(I_S - I_{BO})}$	50/60Hz Sine Wave	100		Ω
I_{BO}	Breakover Current	50/60Hz Sine Wave		10	μA
I_{TRM}	Peak Repetitive Pulse Current (refer to figure 2)	$T_P = 10\mu s$ $T_A = 125C$	60Hz	80	A
			5Hz	160	
I_{TSM}	Peak Non-repetitive Surge Current (refer to figure 4)	Single Cycle	60Hz	20	A
			50Hz	16.7	
di/dt	Critical Rate of Rise of On-state Current			150	A/ μs
dv/dt	Critical Rate of Rise of Off-state Voltage		1500		V/ μs
T_S	Storage Temperature Range		-40	150	$^{\circ}C$
T_J	Junction Temperature Range		-40	125	$^{\circ}C$
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	DO-214AC		30	$^{\circ}C/W$

I-V Curve Characteristics



- V_{DRM} Stand-off Voltage -- Maximum voltage that can be applied to the PTSS without trigger
- V_{BO} Break Over Voltage -- Maximum voltage that trigger the PTSS
- V_T Turn on Voltage -- Voltage drop after PTSS is triggered on
- I_H Holding Current -- Current that hold the PTSS to on state

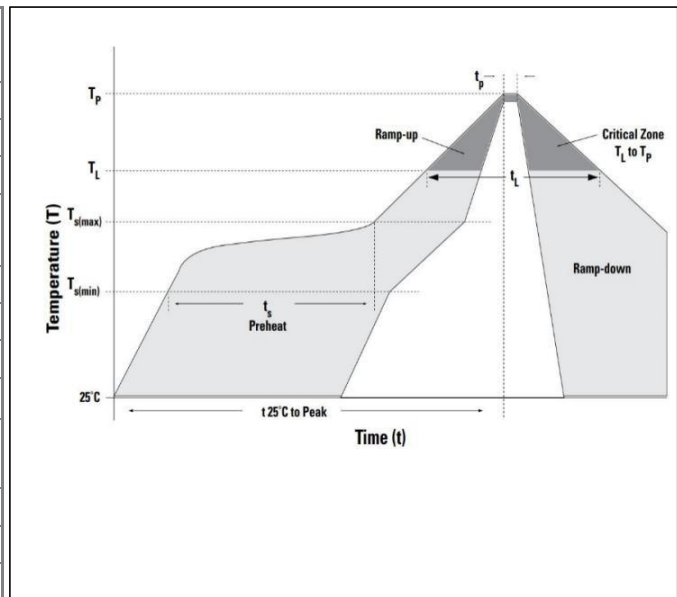
Ratings and Characteristic Curves (T = 25°C unless otherwise noted)



Soldering Parameters

Soldering profile

Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{S(min)}$)	150°C
	- Temperature Max ($T_{S(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_A) to peak)		3°C/second max
TS(max) to T_A - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_A) (Liquidus)	217°C
	- Time (min to max) (t_s)	60 – 150 seconds
Peak Temperature (T_p)		260+0/-5 °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		260°C



Typical Cooker Ignition Waveform

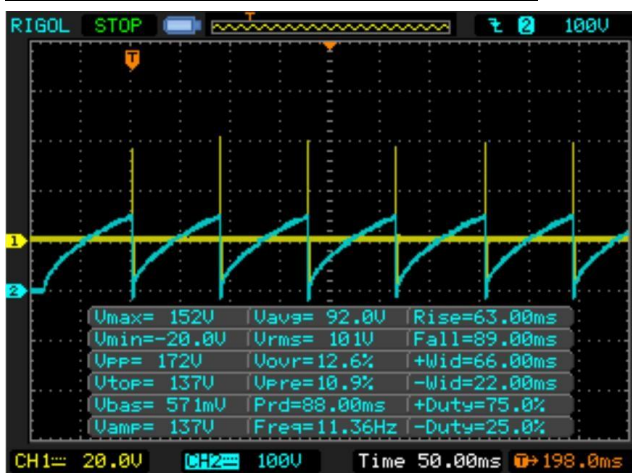


Figure5. TT150 ignition waveform(~12.5Hz)
*Yellow waveform is current, unit is Ampere.

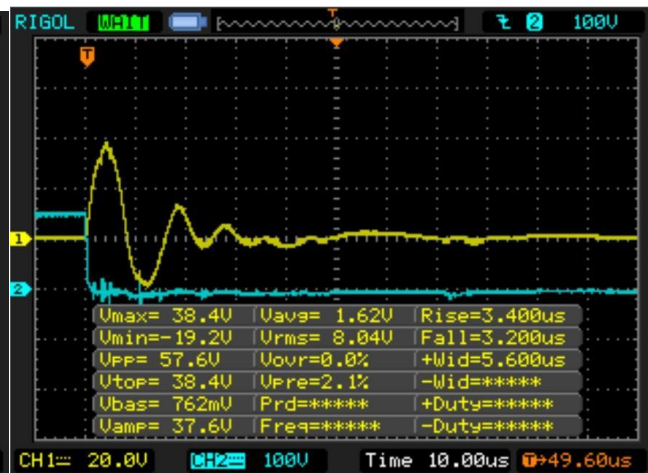
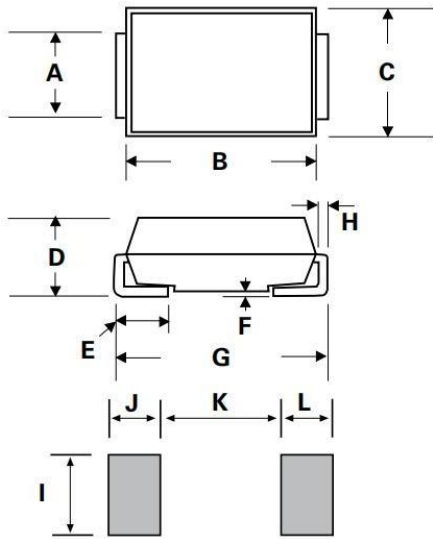


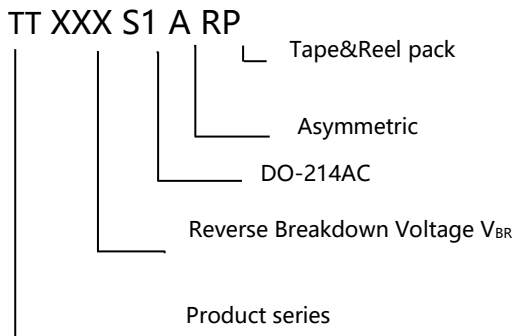
Figure6. TT150 ignition current waveform detail

Dimensions

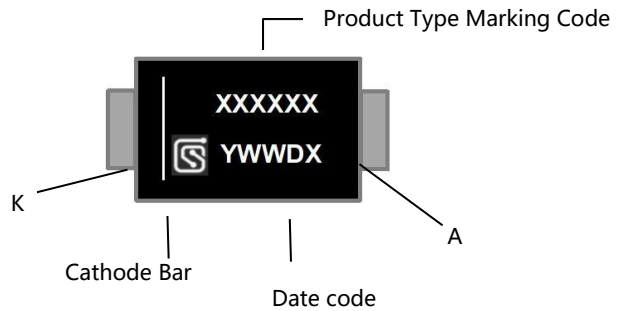


	Inches		Millimeters	
	Min	Max	Min	Max
A	0.049	0.065	1.250	1.650
B	0.157	0.177	3.990	4.500
C	0.100	0.110	2.540	2.790
D	0.078	0.090	1.980	2.290
E	0.030	0.060	0.780	1.520
F	-	0.008	-	0.203
G	0.194	0.208	4.930	5.280
H	0.006	0.012	0.152	0.305
I	0.070	-	1.800	-
J	0.082	-	2.100	-
K	-	0.090	-	2.300
L	0.082	-	2.100	-

Part Numbering



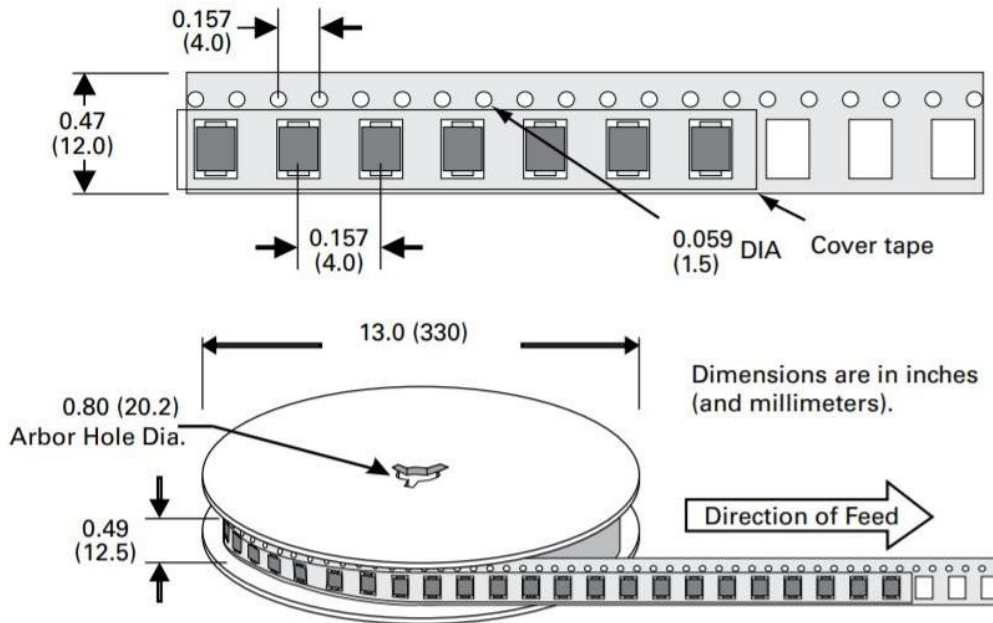
Part Marking



Packing

Part number	Package name	Small packing quantity	Packing method
TTXXS1ARP	DO-214AC	5000	Tape & Reel

Tape and Reel Specification



Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	10-Sep-2022
1.1	Add TT150 typical ignition waveform	17-Oct-2022
1.2	Change Marking information	5-Dec-2022