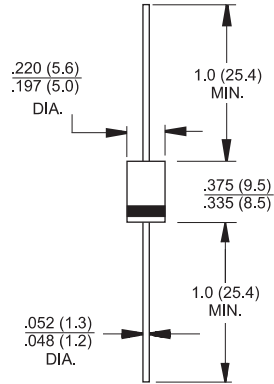




DO-201AD



Features

- ✧ Low power loss, high efficiency.
- ✧ High current capability, Low VF.
- ✧ High reliability
- ✧ High surge current capability.
- ✧ Epitaxial construction.
- ✧ Guard-ring for transient protection.
- ✧ For use in low voltage, high frequency inventor, free wheeling, and polarity protection application

Mechanical Data

- ✧ Cases: DO-201AD molded plastic
- ✧ Polarity: Color band denotes cathode
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.375", (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Weight: 1.2 grams

Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	SR 520	SR 530	SR 540	SR 550	SR 560	SR 590	SR 5100	SR 5200	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	20	30	40	50	60	90	100	200	V
Maximum RMS Voltage	V_{RMS}	14	21	28	35	42	63	70	140	V
Maximum DC Blocking Voltage	V_{DC}	20	30	40	50	60	90	100	200	V
Maximum Average Forward Rectified Current See Fig. 1	$I_{(AV)}$	5.0								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	120								A
Maximum Instantaneous Forward Voltage @5.0A	V_F	0.55		0.70		0.85			V	
Maximum D.C. Reverse Current @ $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=125^\circ\text{C}$	I_R	0.5			0.1			mA		
		15		10		5.0	1.0	mA		
Typical Junction Capacitance (Note 2)	C_j	250		210		120			pF	
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$ $R_{\theta JC}$	35			10			$^\circ\text{C/W}$		
		2		2						
Operating Junction Temperature Range	T_J	-65 to +150								$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150								$^\circ\text{C}$

- Notes:
1. Mount on Cu-Pad Size 5mm x 5mm on P.C.B.
 2. Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

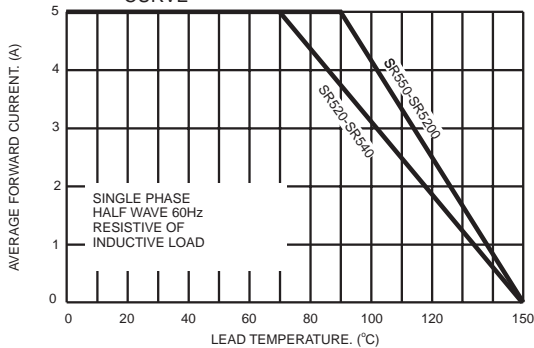


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

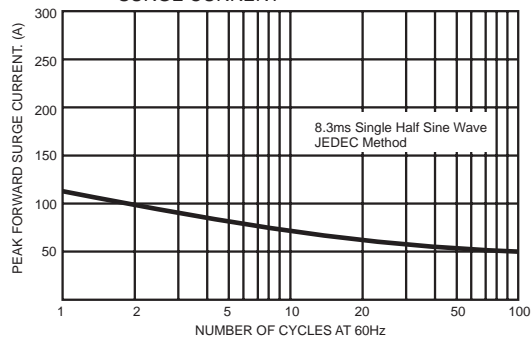


FIG.3- TYPICAL FORWARD CHARACTERISTICS

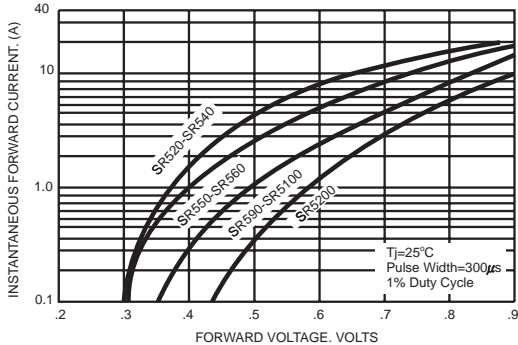


FIG.4- TYPICAL REVERSE CHARACTERISTICS

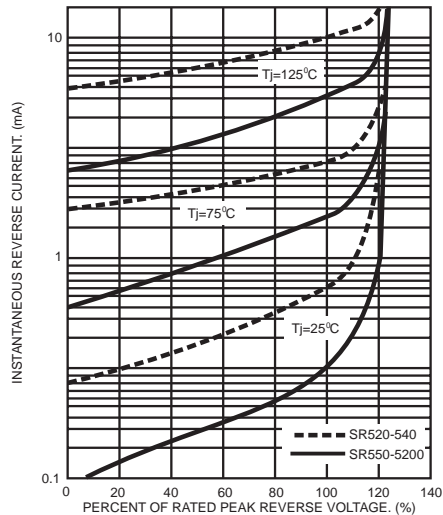


FIG.5- TYPICAL JUNCTION CAPACITANCE

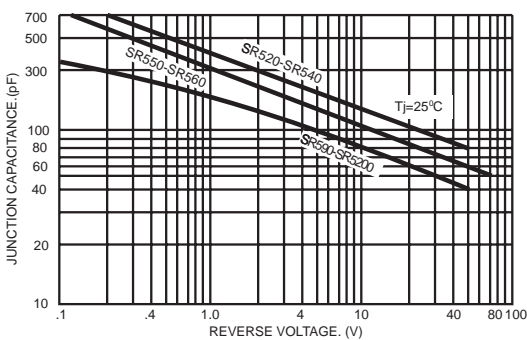
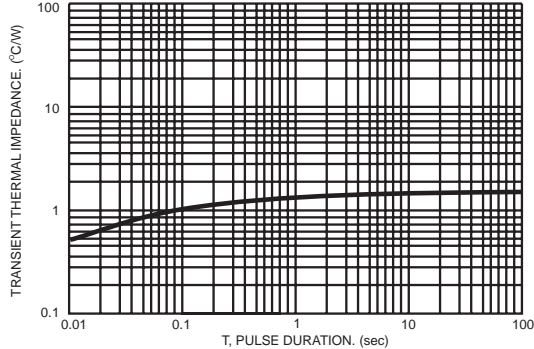


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

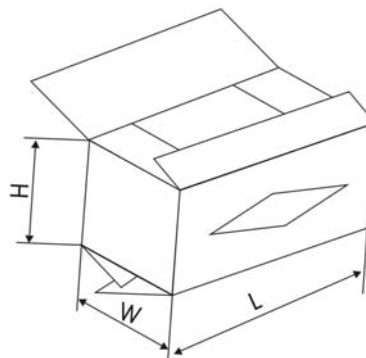
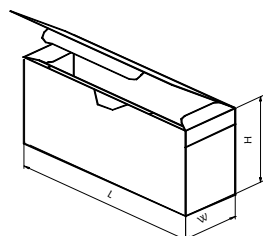


Package Specifications

Case Style	Tape Pattern
A-405 R-1 DO-41 DO-15 DO-15L DO-15B R-3	<p> 6.0 ± 0.4 $52 \begin{smallmatrix} +1.5 \\ 0 \end{smallmatrix}$ 5 1.2max 1.0max 0.8max $L1-L2 \leq 0.8 \text{mm}$ </p>
DO-27S DO-27 R-6	<p> 6.0 ± 0.4 $52 \begin{smallmatrix} +1.5 \\ 0 \end{smallmatrix}$ 10 1.2max 1.0max 0.8max $L1-L2 \leq 0.8 \text{mm}$ </p>
A-405	<p> 6.0 ± 0.4 $36 \begin{smallmatrix} +1.5 \\ 0 \end{smallmatrix}$ 5 1.2max 1.0max 0.8max $L1-L2 \leq 0.8 \text{mm}$ </p>
A-405 DO-41	<p> 6.0 ± 0.4 $26 \begin{smallmatrix} +1.5 \\ 0 \end{smallmatrix}$ 5 1.2max 1.0max 0.8max $L1-L2 \leq 0.8 \text{mm}$ </p>

Package Specifications

1. SKETCH MAP OF PACKAGE



INNER BOX

CARTON

2.AMMUNITION PACKAGING (T/B)

PACKAGING CODE	CASE TYPE	INNER BOX				CARTON		APPROX WEIGHT (Kg)
		(K)	COMPONENT SPACE (mm)	TAPE SPACE (mm)	SIZE (mm ³)	(K)	SIZE (mm ³)	
HA	A-405	5	5	52	257x80x145	50	430x280x310	14
HB		2.5	5	52	255x75x75	50	400x270x340	20
HC	DO-41	5	5	52	257x80x145	50	430x280x310	20
HD		3.0	5	52	255x75x100	42	430x285x320	21
HE	DO-41(G)	2.5	5	52	265x75x75	100	440x270x340	21
HF	DO-15	2.0	5	52	255x75x100	28	430x285x320	14
HG	DO-15L/B	2	5	52	255x80x145	20	430x280x310	14
HH	DO-34(G)	5	5	52	255x75x75	100	440x270x340	18
HI	DO-35(G)	5	5	52	255x75x75	100	440x270x340	20
HJ	R-1	5	5	52	255x80x145	50	430x280x310	14
HK	R-3	2	5	52	255x80x120	20	430x280x260	17
HL	R-6	0.25	10	52	255x75x75	5	400x270x340	12
HR	DO-27	1.25	10	52	255x80x145	12.5	430x280x310	17
HM	A-405F	5	5	36	255x55x140	100	530x310x310	22
HN	A-405	2.5	5	26	255x55x75	70	400x270x340	14
HP	DO-41	2.5	5	26	255x55x75	70	400x270x340	14

SOLDER_REFLOW_PROFILE

Table 4-2 Pb-free Process – Package Classification Reflow Temperatures

Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6 mm	260 +0 °C *	260 +0 °C *	260 +0 °C *
1.6 mm - 2.5 mm	260 +0 °C *	250 +0 °C *	245 +0 °C *
≥2.5 mm	250 +0 °C *	245 +0 °C *	245 +0 °C *

* Tolerance: The device manufacturer/supplier shall assure process compatibility up to and including the stated classification temperature (this means Peak reflow temperature +0 °C. For example 260 °C+0°C) at the rated MSL level.

Table 5-2 Classification Reflow Profiles

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average Ramp-Up Rate (Ts _{max} to Tp)	3 °C/second max.	3° C/second max.
Preheat <ul style="list-style-type: none"> - Temperature Min (Ts_{min}) - Temperature Max (Ts_{max}) - Time (ts_{min} to ts_{max}) 	100 °C 150 °C 60-120 seconds	150 °C 200 °C 60-180 seconds
Time maintained above: <ul style="list-style-type: none"> - Temperature (T_L) - Time (t_L) 	183 °C 60-150 seconds	217 °C 60-150 seconds
Peak/Classification Temperature (Tp)	See Table 4.1	See Table 4.2
Time within 5 °C of actual Peak Temperature (tp)	10-30 seconds	20-40 seconds
Ramp-Down Rate	6 °C/second max.	6 °C/second max.
Time 25 °C to Peak Temperature	6 minutes max.	8 minutes max.

Note 1: All temperatures refer to topside of the package, measured on the package body surface.

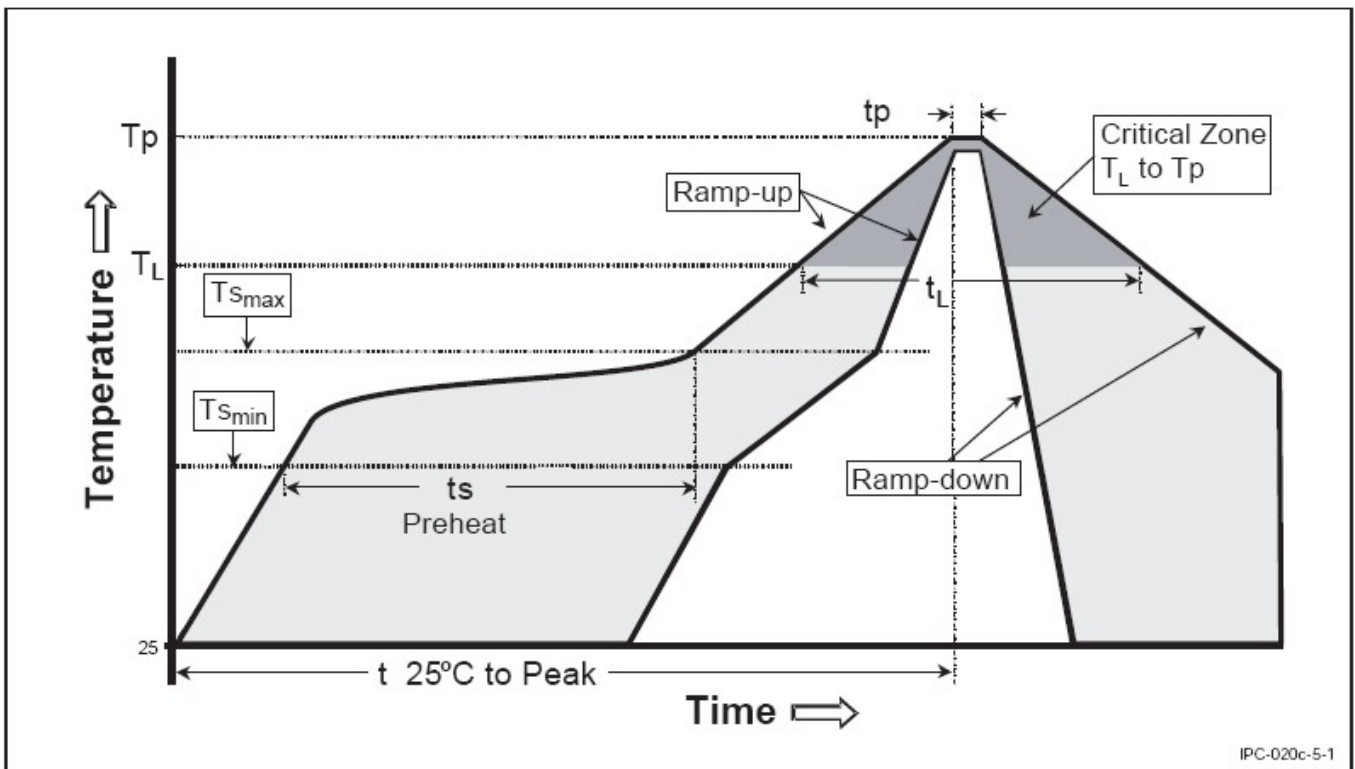


Figure 5-1 Classification Reflow Profile

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