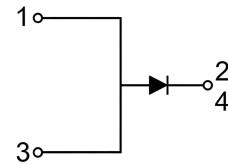


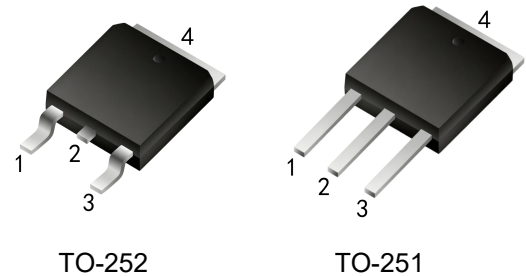
### Superfast Recovery Rectifiers

Parameter	Value	Unit
$V_{RRM}$	100~600	V
$I_{F(AV)}$	5	A



### Features

- High current capability
- Low forward voltage drop
- Low power loss, high efficiency
- High surge capability
- High temperature soldering guaranteed



### Applications

- Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

### Absolute Maximum Ratings (Ta=25°C, unless otherwise noted)

Parameter	TO-251	SF501VS	SF502VS	SF503VS	SF504VS	SF505VS	SF506VS	Unit
	TO-252	SF501DS	SF502DS	SF503DS	SF504DS	SF505DS	SF506DS	
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	100	200	300	400	500	600	V
Maximum RMS Voltage	$V_{RMS}$	70	140	210	280	350	420	V
Maximum DC Blocking Voltage	$V_{DC}$	100	200	300	400	500	600	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	5.0						A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)	$I_{FSM}$	150						A
Maximum Forward Voltage at 5.0A DC	$V_F$	1.0		1.25		1.65		V
Maximum DC Reverse Current $T_J=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_J=125^\circ\text{C}$	$I_R$			1.0		300		$\mu\text{A}$
Typical Junction Capacitance Per Element (Note1)	$C_J$	45						pF
Typical Thermal Resistance(Note2)	$R_{\theta JC}$	15						$^\circ\text{C}/\text{W}$
Maximum Reverse Recovery Time(Note3)	$T_{rr}$	35						ns
Operating Temperature Range	$T_J$	-55 to +150						$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150						$^\circ\text{C}$

#### Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
2. Mounted on 10cm x 10cm x 1mm copper pad area
3. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$

## Typical Characteristics

FIG.1 - FORWARD CURRENT DERATING CURVE

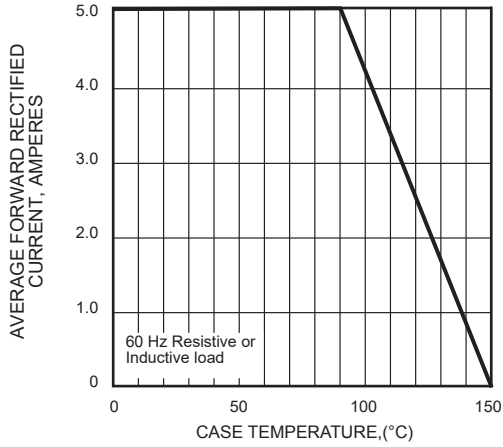


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

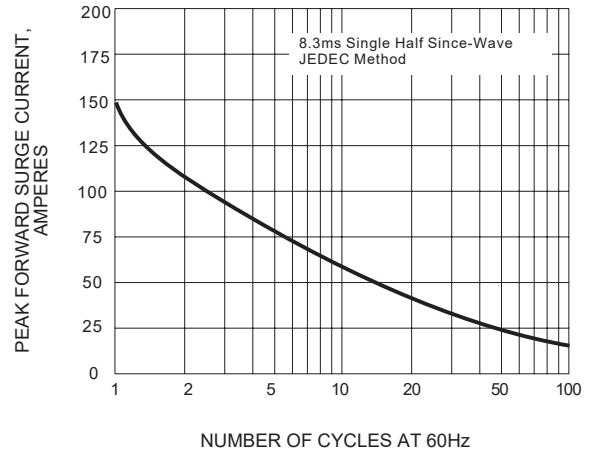


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

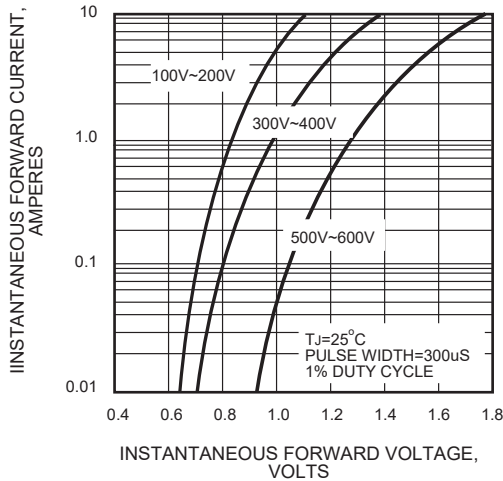


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

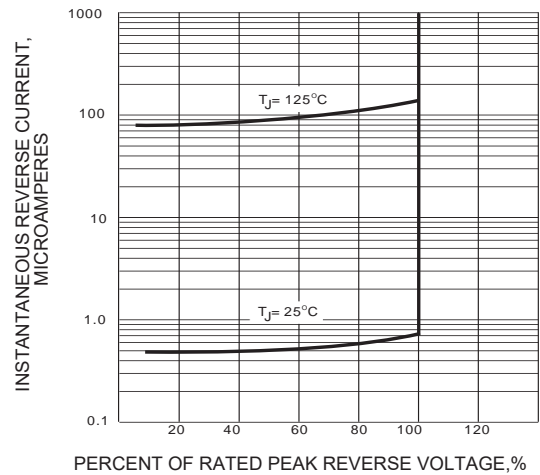
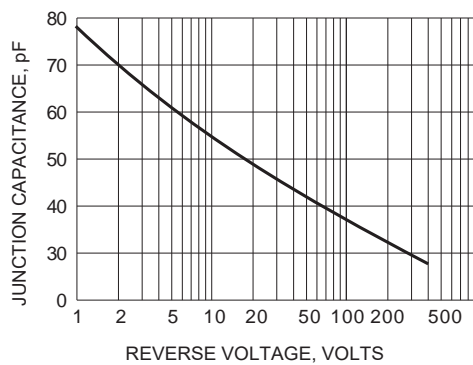
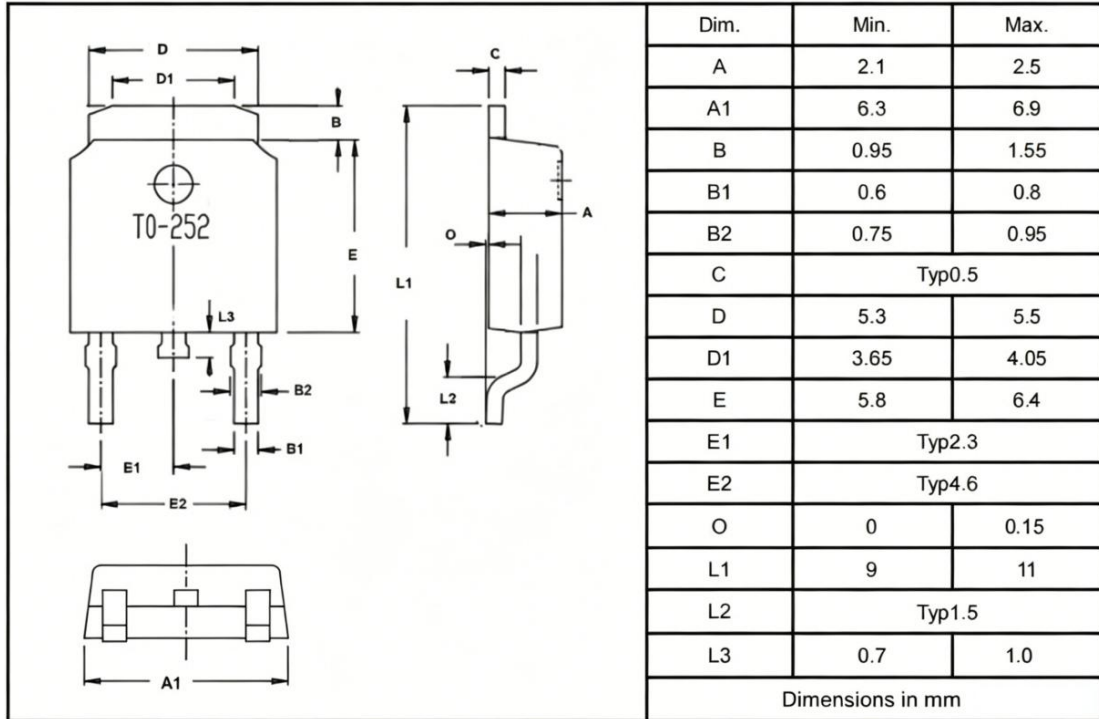


FIG.5 - TYPICAL JUNCTION CAPACITANCE

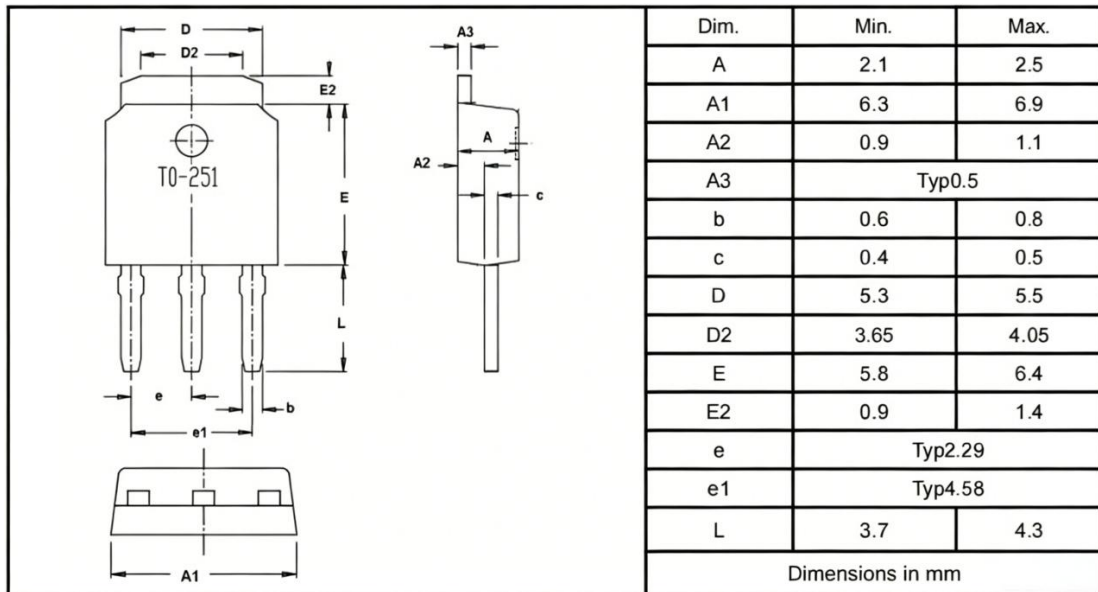


### Package Outlines

#### TO-252



#### TO-251



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