

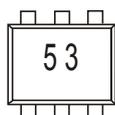
## Plastic-Encapsulate Diodes

SWITCHING DIODE

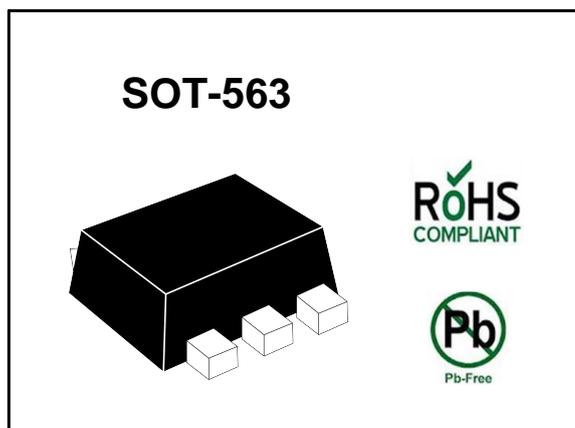
### FEATURES

- Fast Switching Speed
- For General Purpose Switching Applications
- High Conductance

Marking: 53



Solid point=Pin1 positioning point



### Maximum Ratings and Electrical Characteristics, Single Diode @Ta=25°C

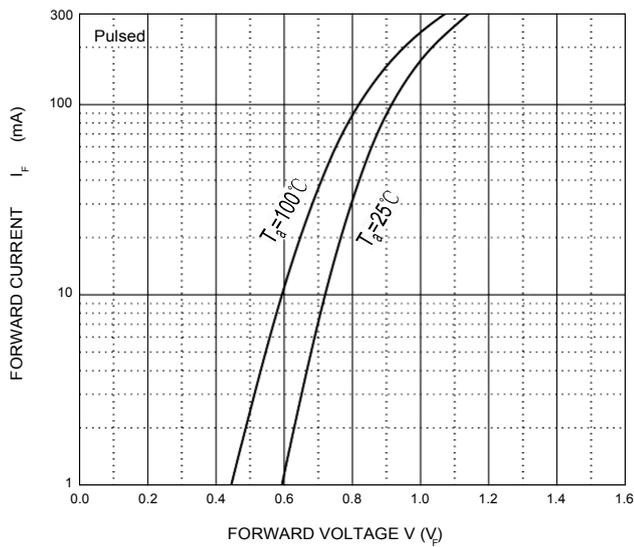
| Parameter  | Symbol          | Limit    | Unit |
|--|-----------------|----------|------|
| Non-Repetitive Peak Reverse Voltage                | $V_{RM}$        | 100      | V    |
| Peak Repetitive Peak Reverse Voltage               | $V_{RRM}$       | 75       | V    |
| Working Peak Reverse Voltage                       | $V_{RWM}$       |          |      |
| DC Blocking Voltage                                | $V_R$           |          |      |
| RMS Reverse Voltage                                | $V_{R(RMS)}$    | 53       | V    |
| Forward Continuous Current                         | $I_{FM}$        | 300      | mA   |
| Average Rectified Output Current                   | $I_o$           | 200      | mA   |
| Non-Repetitive Peak Forward Surge Current @t=8.3ms | $I_{FSM}$       | 2.0      | A    |
| Power Dissipation                                  | $P_d$           | 150      | mW   |
| Thermal Resistance Junction to Ambient             | $R_{\theta JA}$ | 833      | °C/W |
| Operation Junction and Storage Temperature Range   | $T_J, T_{STG}$  | -55~+150 | °C   |

### Electrical Ratings @Ta=25°C

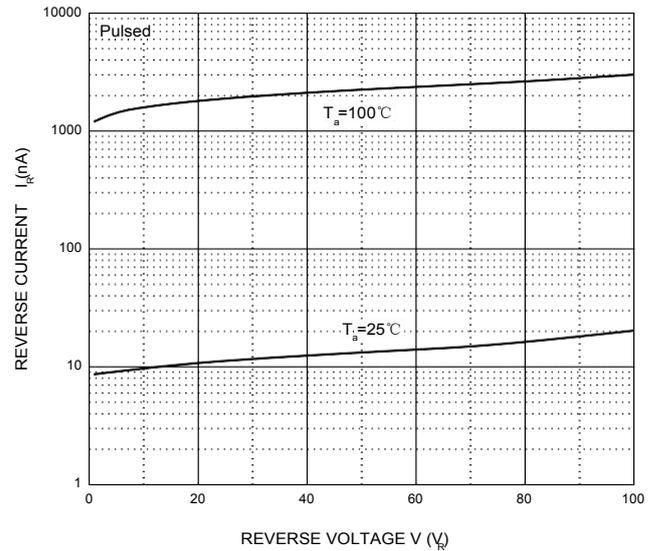
| Parameter                     | Symbol     | Min | Typ | Max   | Unit    | Conditions   |
|-------------------------------|------------|-----|-----|-------|---------|--|
| Reverse breakdown voltage     | $V_{(BR)}$ | 75  |     |       | V       | $I_R=100 \mu A$  |
| Forward voltage               | $V_{F1}$   |     |     | 0.715 | V       | $I_F=1mA$  |
|                               | $V_{F2}$   |     |     | 0.855 | V       | $I_F=10mA$   |
|                               | $V_{F3}$   |     |     | 1.0   | V       | $I_F=50mA$   |
|                               | $V_{F4}$   |     |     | 1.25  | V       | $I_F=150mA$  |
| Reverse current               | $I_{R1}$   |     |     | 1     | $\mu A$ | $V_R=75V$  |
|                               | $I_{R2}$   |     |     | 25    | nA      | $V_R=20V$  |
| Capacitance between terminals | $C_T$      |     |     | 2     | pF      | $V_R=0V, f=1MHz$   |
| Reverse recovery time         | $t_{rr}$   |     |     | 4     | ns      | $I_F=I_R=10mA$<br>$I_{rr}=0.1 \times I_R, R_L=100\Omega$ |

## Typical Characteristics

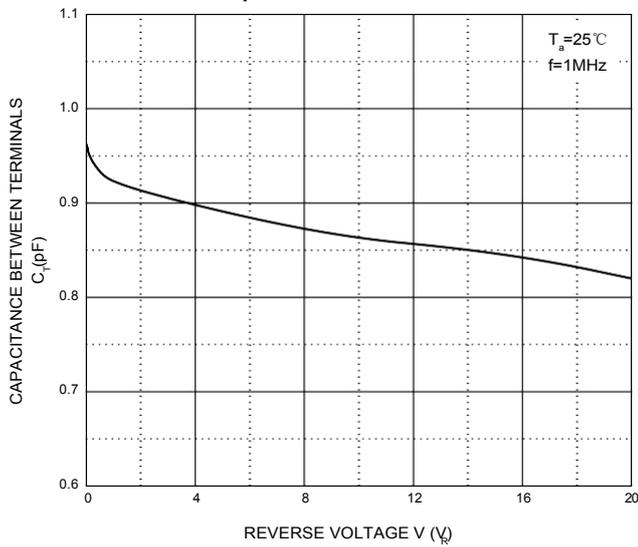
**Forward Characteristics**



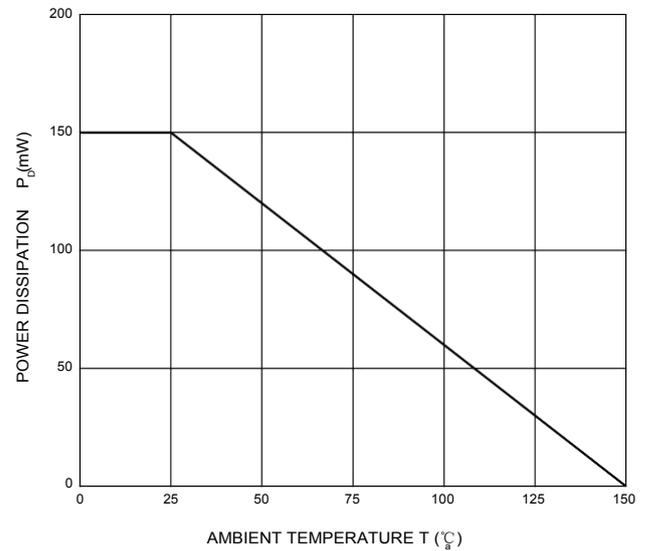
**Reverse Characteristics**



**Capacitance Characteristics**

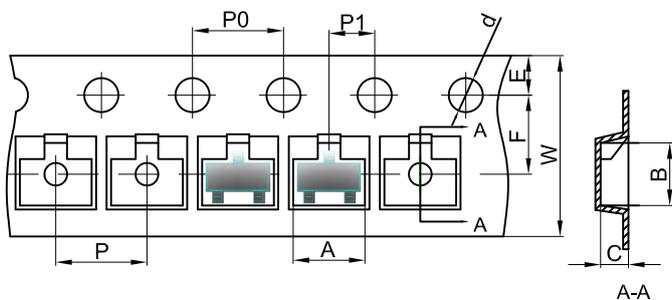


**Power Derating Curve**



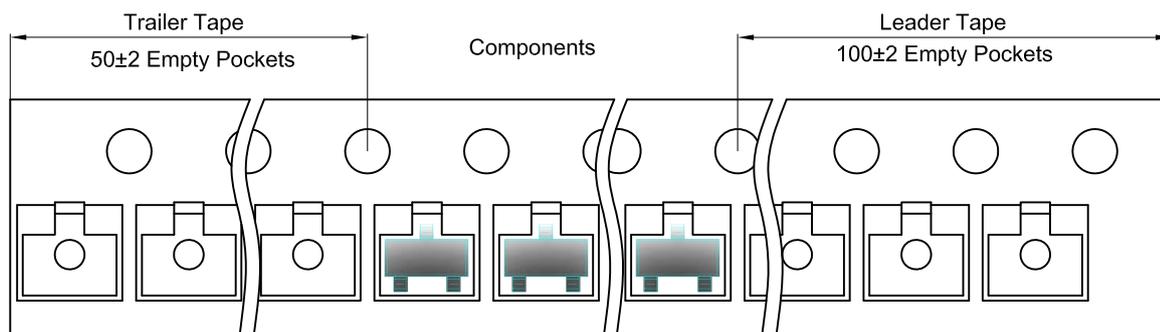
## SOT-23 Tape and Reel

### SOT-23 Embossed Carrier Tape

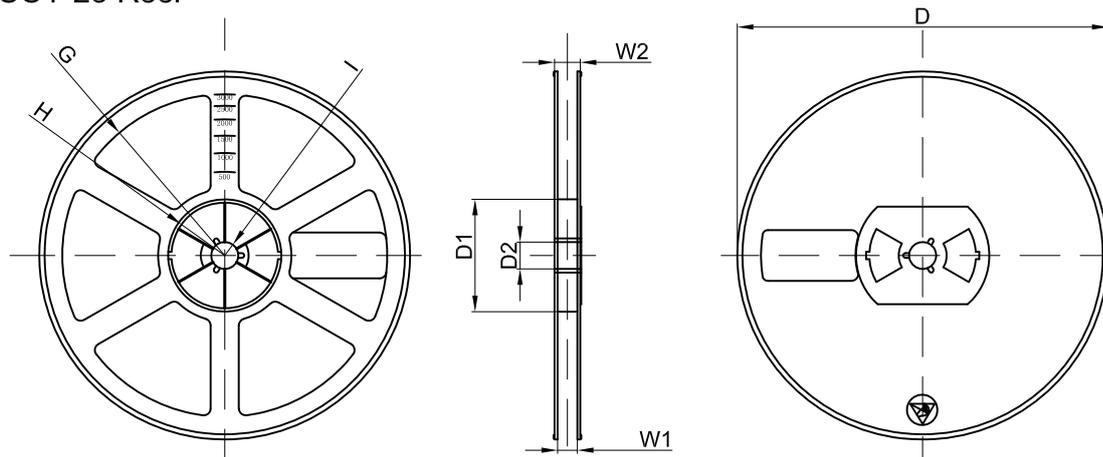


| Dimensions are in millimeter |      |      |      |       |      |      |      |      |      |      |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type                     | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W    |
| SOT-23                       | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

### SOT-23 Tape Leader and Trailer



### SOT-23 Reel



| Dimensions are in millimeter |         |       |       |        |        |       |      |       |
|------------------------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option                  | D       | D1    | D2    | G      | H      | I     | W1   | W2    |
| 7" Dia                       | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL     | Reel Size | Box        | Box Size(mm) | Carton      | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch    | 45,000 pcs | 203×203×195  | 180,000 pcs | 438×438×220     |          |



| SYMBOL | MILLIMETER |       |
|--------|------------|-------|
|        | MIN        | MAX   |
| A      | 0.900      | 1.150 |
| A1     | 0.000      | 0.100 |
| A2     | 0.900      | 1.050 |
| b      | 0.300      | 0.500 |
| c      | 0.080      | 0.150 |
| D      | 2.800      | 3.000 |
| E      | 1.200      | 1.400 |
| E1     | 2.250      | 2.550 |
| e      | 0.950 TYP  |       |
| e1     | 1.800      | 2.000 |
| L      | 0.550 REF  |       |
| L1     | 0.300      | 0.500 |
| θ      | 0°         | 8°    |

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