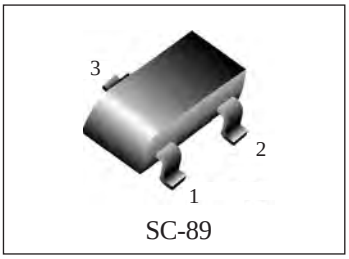
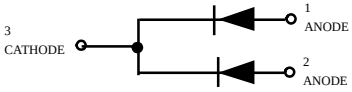
# Common Cathode Silicon Dual Switching Diode

This Common Cathode Silicon Epitaxial Planar Dual Diode is designed for use in ultra high speed switching applications. This device is housed in the SC–89 package which is designed for low power surface mount applications, where board space is at a premium.

- Fast $t_{rr}$
- Low $C_D$
- Available in 8 mm Tape and Reel



SC-89




**MAXIMUM RATINGS** ($T_A$ = 25 °C)

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 80 | Vdc |
| Peak Reverse Voltage | $V_{RM}$ | 80 | Vdc |
| Forward Current | $I_F$ | 100 | mAdc |
| Peak Forward Current | $I_{FM}$ | 300 | mAdc |
| Peak Forward Surge Current | $I_{FSM}$(1) | 2.0 | Adc |

**THERMAL CHARACTERISTICS**

| Rating | Symbol | Max | Unit |
|---|---|---|---|
| Power Dissipation | $P_D$ | 150 | mW |
| Junction Temperature | $T_J$ | 150 | C |
| Storage Temperature Range | $T_{stg}$ | –55 to +150 | C |

1. t = 1 μS

**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 C)

| Characteristic | Symbol | Condition | Min | Max | Unit |
|---|---|---|---|---|---|
| Reverse Voltage Leakage Current | $I_R$ | $V_R$ = 70 V | — | 0.1 | μAdc |
| Forward Voltage | $V_F$ | $I_F$ = 100 mA | — | 1.2 | Vdc |
| Reverse Breakdown Voltage | $V_R$ | $I_R$ = 100 μA | 80 | — | Vdc |
| Diode Capacitance | $C_D$ | $V_R$ = 6.0 V, f = 1.0 MHz | — | 3.5 | pF |
| Reverse Recovery Time | $t_{rr}$(2) | $I_F$ = 5.0 mA, $V_R$ = 6.0 V, $R_L$ = 100 Ω, $I_{rr}$ = 0.1 $I_R$ | — | 4.0 | ns |

2. $t_{rr}$ Test Circuit on following page.

**Driver Marking**

| |
|---|
| FDS222T1G=N |

## Ordering Information

| Device | Marking | Shipping |
|---|---|---|
| FDS222T1G | N | 3000/Tape&Reel |
| FDS222T3G | N | 10000/Tape&Reel |

## Electrical characteristic curves

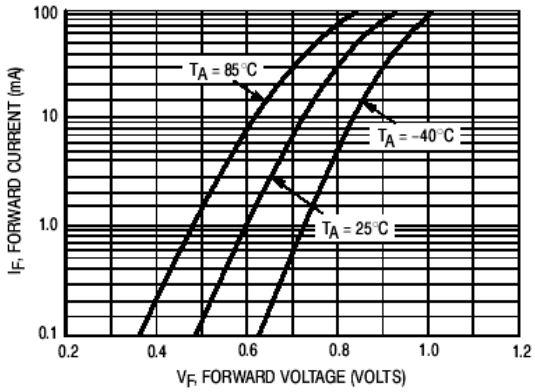



Figure 1. Forward Voltage

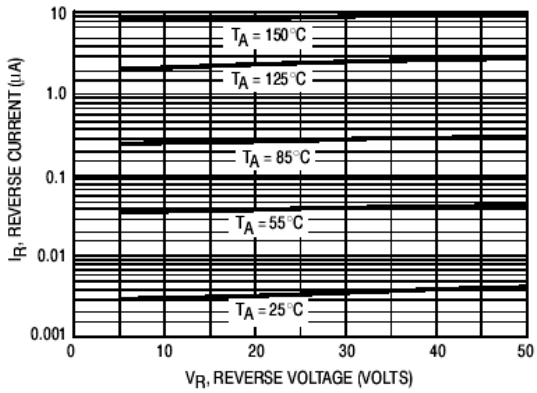



Figure 2. Reverse Current

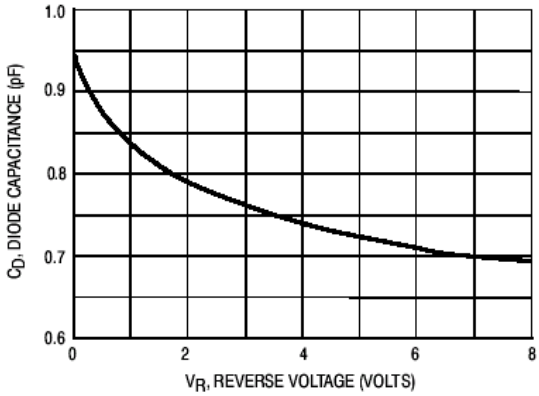
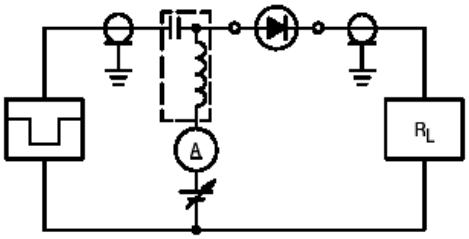
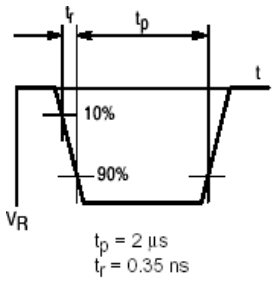


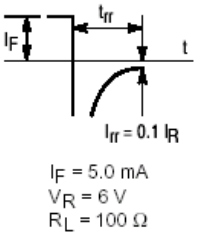

Figure 3. Diode Capacitance




RECOVERY TIME EQUIVALENT TEST CIRCUIT

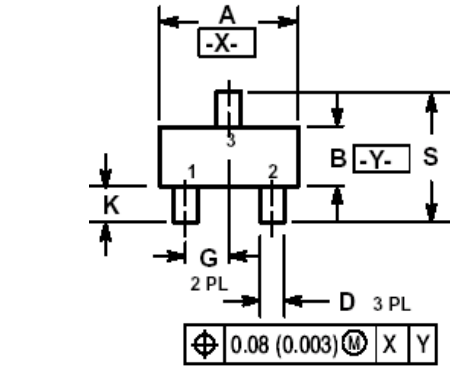


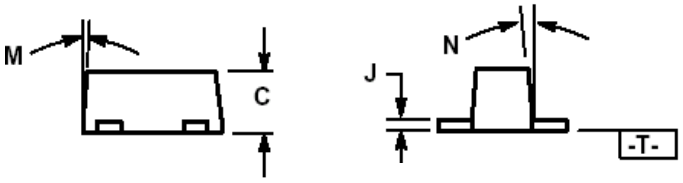

INPUT PULSE




OUTPUT PULSE

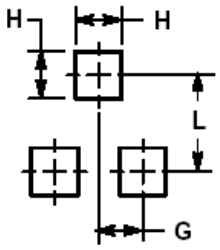
## SC-89



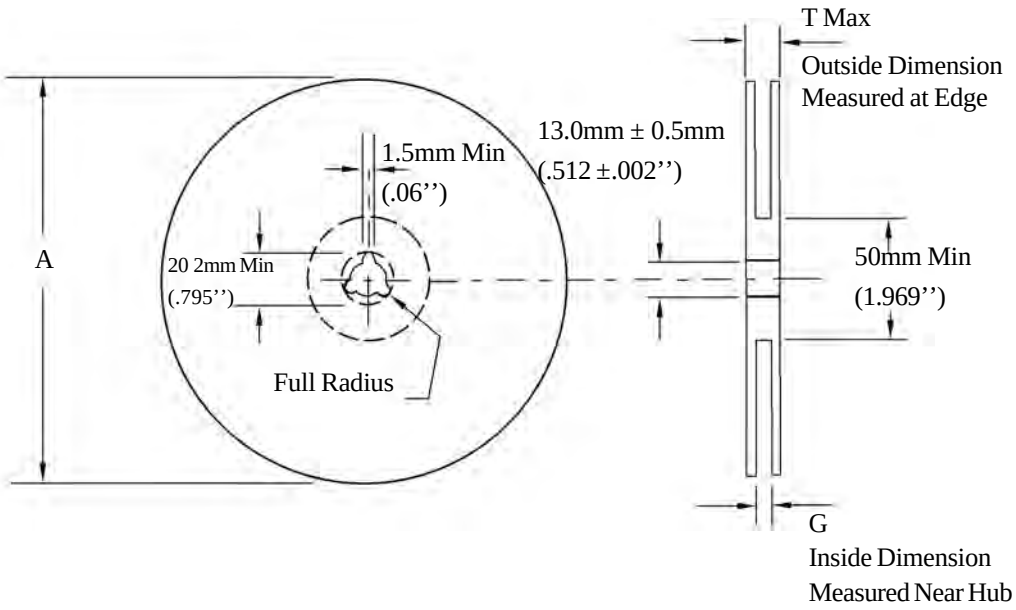




NOTES:
1.DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2.CONTROLLING DIMENSION: MILLIMETERS
3.MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4.463C-01 OBSOLETE, NEW STANDARD 463C-02.

| | MILLIMETERS | | | INCHES | | |
|---|---|---|---|---|---|---|
| DIM | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |
| B | 0.75 | 0.85 | 0.95 | 0.030 | 0.034 | 0.040 |
| C | 0.60 | 0.70 | 0.80 | 0.024 | 0.028 | 0.031 |
| D | 0.23 | 0.28 | 0.33 | 0.009 | 0.011 | 0.013 |
| G | 0.50 BSC | | | 0.020 BSC | | |
| H | 0.53 REF | | | 0.021 REF | | |
| J | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| K | 0.30 | 0.40 | 0.50 | 0.012 | 0.016 | 0.020 |
| L | 1.10 REF | | | 0.043 REF | | |
| M | --- | --- | 10 ° | --- | --- | 10 ° |
| N | --- | --- | 10 ° | --- | --- | 10 ° |
| S | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |



# EMBOSSED TAPE AND REEL DATA FOR DISCRETES




| Size | A Max | G | T Max |
|---|---|---|---|
| 8 mm | 330mm (12.992'') | 8.4mm+1.5mm, -0.0 (.33''+.059'', -0.00) | 14.4mm (.56'') |

## Reel Dimensions

Metric Dimensions Govern — English are in parentheses for reference only

Storage Conditions

Temperature: 5 to 40 Deg.C (20 to 30 Deg. C is preferred)
Humidity: 30 to 80 RH (40 to 60 is preferred )
Recommended Period: One year after manufacturing
(This recommended period is for the soldering condition only. The characteristics and reliabilities of the products are not restricted to this limitation)