# 6A05 THRU 6A10

## GENERAL PURPOSE SILICON RECTIFIER

*Reverse Voltage - 50 to 1000 Volts    Forward Current - 6.0 Amperes*

**R-6**

1.0 (25.4)
MIN.

0.360 (9.1)
0.340(8.6)
DIA.

0.360(9.1)
0.340(8.6)

1.0 (25.4)
MIN.

0.052 (1.3)
0.048 (1.2)
DIA.

*Dimensions in inches and (millimeters)*
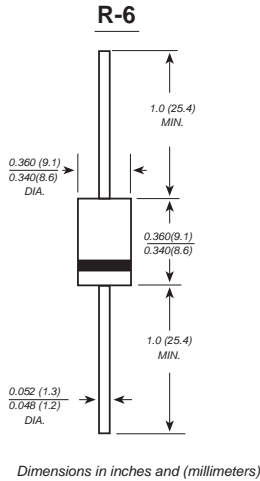
### FEATURES

◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
◆ Construction utilizes void-free molded plastic technique
◆ Low reverse leakage
◆ High forward surge current capability
◆ High temperature soldering guaranteed:
  250℃/10 seconds,0.375"(9.5mm) lead length, 5 lbs. (2.3kg) tension

### MECHANICAL DATA

**Case**: R-6 molded plastic body
**Terminals**: Plated axial leads, solderable per MIL-STD-750, Method 2026
**Polarity**: Color band denotes cathode end
**Mounting Position**: Any
**Weight**:0.072 ounce, 2.05 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.
Single phase half-wave 60Hz,resistive or inductive load,for capacitive load current derate by 20%.

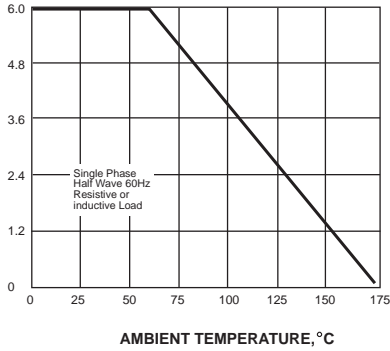| | SYMBOLS | 6A05 | 6A1 | 6A2 | 6A4 | 6A6 | 6A8 | 6A10 | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | VOLTS |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | VOLTS |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | VOLTS |
| Maximum average forward rectified current 0.375"(9.5mm) lead length at $T_A$=60℃ | $I_{(AV)}$ | 6.0 | | | | | | | Amps |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 400 | | | | | | | Amps |
| Maximum instantaneous forward voltage at 6.0A | $V_F$ | 0.95 | | | | | | | Volts |
| Maximum DC reverse current        $T_A$=25℃ at rated DC blocking voltage        $T_A$=100℃ | $I_R$ | 10.0 400 | | | | | | | μA |
| Typical junction capacitance (NOTE 1) | $C_J$ | 150 | | | | | | | pF |
| Typical thermal resistance (NOTE 2) | $R_{\theta JA}$ | 10.0 | | | | | | | ℃/W |
| Operating junction and storage temperature range | $T_J,T_{STG}$ | -65 to +175 | | | | | | | ℃ |

**Note:**1.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
　　　2.Thermal resistance from junction to ambient  at 0.375" (9.5mm)lead length,P.C.B. mounted

# RATINGS AND CHARACTERISTIC CURVES 6A05 THRU 6A10

**FIG. 1- FORWARD CURRENT DERATING CURVE**

AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

Single Phase
Half Wave 60Hz
Resistive or
inductive Load

AMBIENT TEMPERATURE,°C

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

PEAK FORWARD SURGE CURRENT, AMPERES

8.3ms SINGLE HALF SINE-WAVE
(JEDEC Method)

NUMBER OF CYCLES AT 60 Hz
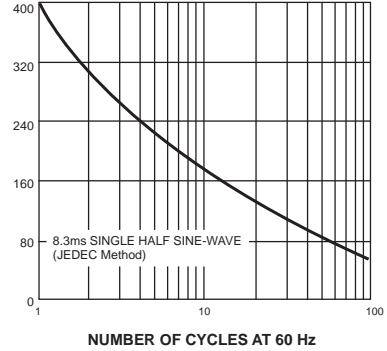
**FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

INSTANTANEOUS FORWARD CURRENT,AMPERES

$T_J$=25℃
PULSE WIDTH=300 μs
1%DUTY CYCLE

INSTANTANEOUS FORWARD VOLTAGE, VOLTS
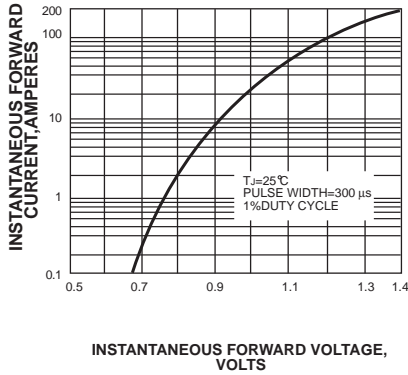
**FIG. 4-TYPICAL REVERSE CHARACTERISTICS**

INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

$T_J$=150℃

$T_J$=100℃

$T_J$=25℃

PERCENT OF PEAK REVERSE VOLTAGE,%
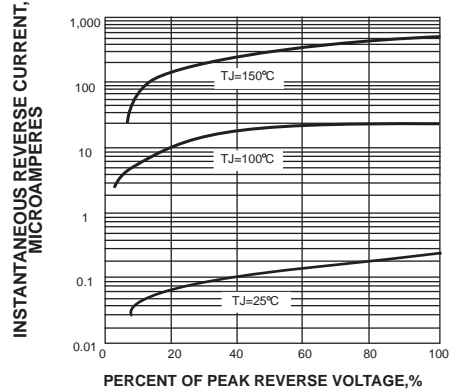
**FIG. 5-TYPICAL JUNCTION CAPACITANCE**

JUNCTION CAPACITANCE, pF

$T_J$=25℃

REVERSE VOLTAGE,VOLTS
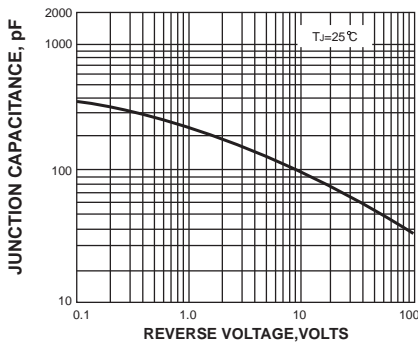
**FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE**

TRANSIENT THERMAL IMPEDANCE, ℃/W

t,PULSE DURATION,sec.