

CMPP6027
CMPP6028

**SURFACE MOUNT SILICON
PROGRAMMABLE UNIJUNCTION
TRANSISTORS**



SOT-23 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPP6027 and CMPP6028 are silicon programmable unijunction transistors, manufactured in a surface mount SOT-23 package, designed for adjustable (programmable) characteristics such as, valley current (I_V), peak current (I_P), and intrinsic standoff ratio (η).

**MARKING CODES: CMPP6027: P27
CMPP6028: P28**

MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$)

| | SYMBOL | | UNITS |
|---|---------------|-------------|---------------------------|
| Gate-Cathode Forward Voltage | V_{GKF} | 40 | V |
| Gate-Cathode Reverse Voltage | V_{GKR} | 5.0 | V |
| Gate-Anode Reverse Voltage | V_{GAR} | 40 | V |
| Anode-Cathode Voltage | V_{AK} | 40 | V |
| Peak Non-Repetitive Forward Current ($t=10\mu\text{s}$) | I_{TSM} | 5.0 | A |
| Peak Repetitive Forward Current ($t=20\mu\text{s}$, D.C.=1.0%) | I_{TRM} | 2.0 | A |
| Peak Repetitive Forward Current ($t=100\mu\text{s}$, D.C.=1.0%) | I_{TRM} | 1.0 | A |
| DC Forward Anode Current | I_T | 150 | mA |
| DC Gate Current | I_G | 50 | mA |
| Power Dissipation (Note 1) | P_D | 167 | mW |
| Storage Temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |
| Operating Junction Temperature | T_J | -50 to +100 | $^\circ\text{C}$ |
| Thermal Resistance (Note 1) | Θ_{JA} | 450 | $^\circ\text{C}/\text{W}$ |

Note 1: Mounted on 2 inch square FR-4 PCB with minimum copper pad area.

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | CMPP6027 | | CMPP6028 | | UNITS |
|-----------|--|----------|-----|----------|------|---------------|
| | | MIN | MAX | MIN | MAX | |
| I_{GAO} | $V_S=40\text{V}$ | | 10 | | 10 | nA |
| I_{GKS} | $V_S=40\text{V}$ | | 50 | | 50 | nA |
| I_P | $V_S=10\text{V}$, $R_G=1.0\text{M}\Omega$ | | 2.0 | | 0.15 | μA |
| I_P | $V_S=10\text{V}$, $R_G=10\text{k}\Omega$ | | 5.0 | | 1.0 | μA |
| I_V | $V_S=10\text{V}$, $R_G=1.0\text{M}\Omega$ | | 50 | | 25 | μA |
| I_V | $V_S=10\text{V}$, $R_G=10\text{k}\Omega$ | 70 | | 25 | | μA |
| I_V | $V_S=10\text{V}$, $R_G=200\Omega$ | 1.5 | | 1.0 | | mA |
| V_T | $V_S=10\text{V}$, $R_G=1.0\text{M}\Omega$ | 0.2 | 1.6 | 0.2 | 0.6 | V |
| V_T | $V_S=10\text{V}$, $R_G=10\text{k}\Omega$ | 0.2 | 0.6 | 0.2 | 0.6 | V |
| V_F | $I_F=50\text{mA}$ | | 1.5 | | 1.5 | V |
| V_O | $V_B=20\text{V}$, $C_C=0.2\mu\text{F}$ | 6.0 | | 6.0 | | V |
| t_r | $V_B=20\text{V}$, $C_C=0.2\mu\text{F}$ | | 80 | | 80 | ns |

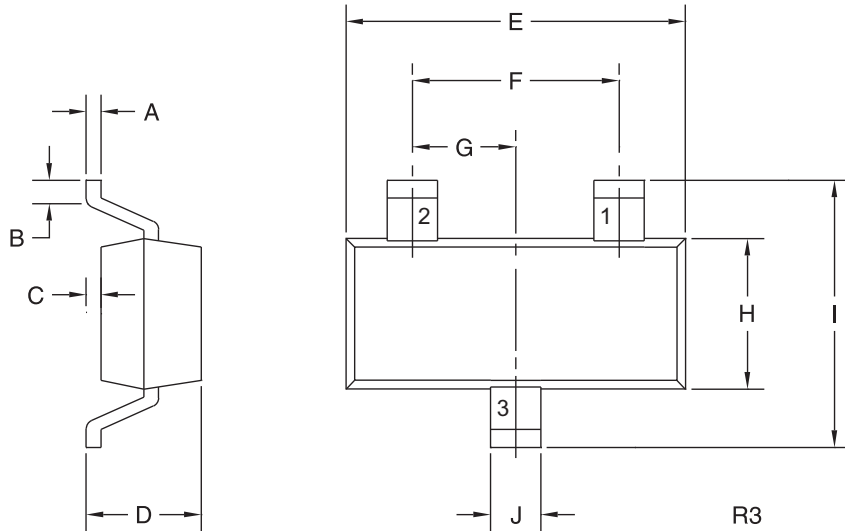
R4 (24-June 2015)

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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Cathode
- 2) Anode
- 3) Gate

MARKING CODES:

CMPP6027: P27
CMPP6028: P28

| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.003 | 0.007 | 0.08 | 0.18 |
| B | 0.006 | - | 0.15 | - |
| C | - | 0.005 | - | 0.13 |
| D | 0.035 | 0.043 | 0.89 | 1.09 |
| E | 0.110 | 0.120 | 2.80 | 3.05 |
| F | 0.075 | | 1.90 | |
| G | 0.037 | | 0.95 | |
| H | 0.047 | 0.055 | 1.19 | 1.40 |
| I | 0.083 | 0.098 | 2.10 | 2.49 |
| J | 0.014 | 0.020 | 0.35 | 0.50 |

SOT-23 (REV: R3)

R4 (24-June 2015)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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