

CMPP6027  
CMPP6028

**SURFACE MOUNT SILICON  
PROGRAMMABLE UNIJUNCTION  
TRANSISTORS**



**SOT-23 CASE**



[www.centralemi.com](http://www.centralemi.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 ( $\eta$ ).

**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)	$\Theta_{JA}$	450	$^\circ\text{C/W}$

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	$\mu\text{A}$
$I_P$	$V_S=10\text{V}$ , $R_G=10\text{k}\Omega$		5.0		1.0	$\mu\text{A}$
$I_V$	$V_S=10\text{V}$ , $R_G=1.0\text{M}\Omega$		50		25	$\mu\text{A}$
$I_V$	$V_S=10\text{V}$ , $R_G=10\text{k}\Omega$	70		25		$\mu\text{A}$
$I_V$	$V_S=10\text{V}$ , $R_G=200\Omega$	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

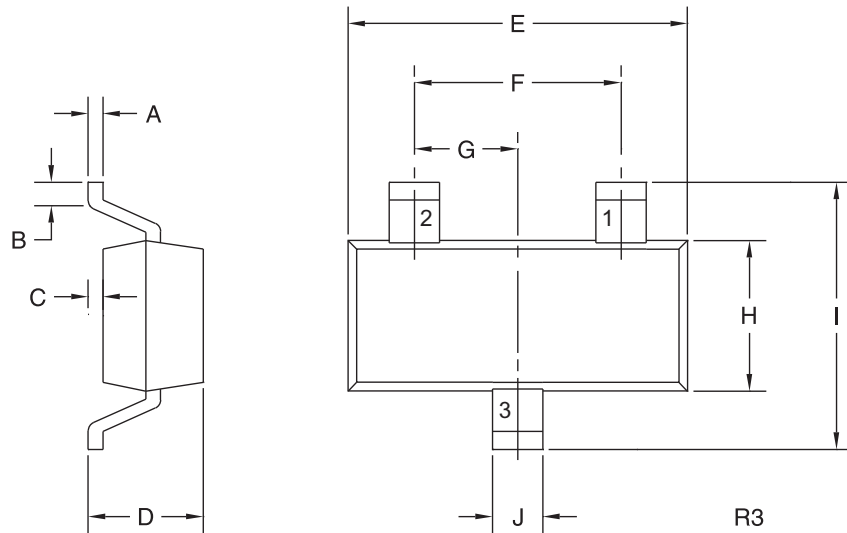
R4 (24-June 2015)

CMPP6027  
CMPP6028

**SURFACE MOUNT SILICON  
PROGRAMMABLE UNIJUNCTION  
TRANSISTORS**



**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING CODES:**

CMPP6027: P27  
CMPP6028: P28

DIMENSIONS				
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)

CMPP6027  
CMPP6028

**SURFACE MOUNT SILICON  
PROGRAMMABLE UNIJUNCTION  
TRANSISTORS**



**SERVICES**

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die Available for Hybrid Applications

---

**LIMITATIONS AND DAMAGES DISCLAIMER:** In no event shall Central be liable for any collateral, indirect, punitive, incidental, consequential, or exemplary damages in connection with or arising out of a purchase order or contract or the use of products provided hereunder, regardless of whether Central has been advised of the possibility of such damages. Excluded damages shall include, but not be restricted to: cost of removal or reinstallation, rework, ancillary costs to the procurement of substitute products, loss of profits, loss of savings, loss of use, loss of data, or business interruption. No claim, suit, or action shall be brought against Central more than two (2) years after the related cause of action has occurred.

In no event shall Central's aggregate liability from any warranty, indemnity, or other obligation arising out of or in connection with a purchase order or contract, or any use of any Central product provided hereunder, exceed the total amount paid to Central for the specific products sold under a purchase order or contract with respect to which losses or damages are claimed. The existence of more than one (1) claim against the specific products sold to Buyer under a purchase order or contract shall not enlarge or extend this limit.

Buyer understands and agrees that the foregoing liability limitations are essential elements of a purchase order or contract and that in the absence of such limitations, the material and economic terms of the purchase order or contract would be substantially different.

R4 (24-June 2015)