

G40E120CTW

TRENCH SCHOTTKY RECTIFIER

REVERSE VOLTAGE – 120 Volts
FORWARD CURRENT – 40 Amperes

FEATURES

- High efficiency
- Reduced high temperature reverse leakage
- Reduced ultra-low forward voltage drop
- Qualification is according to AEC-Q101 Rev_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

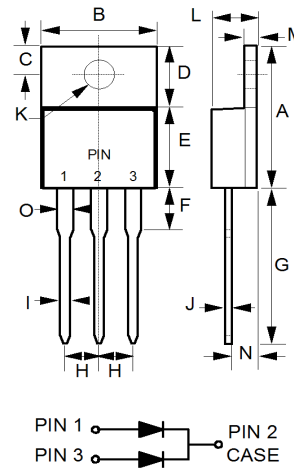
APPLICATION

- DC to DC converters
- AC to DC adaptors

MECHANICAL DATA

- Package: JEDEC TO-220AB
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free"
- Weight: 1.927 grams (Approximate)
- Marking Code: G40E120CTW

TO-220AB



| TO-220AB | | |
|------------------------------|-------|-------|
| DIM | MIN | MAX |
| A | 14.40 | 15.20 |
| B | 9.65 | 10.67 |
| C | 2.54 | 3.43 |
| D | 5.84 | 6.86 |
| E | 8.26 | 9.28 |
| F | -- | 4.20 |
| G | 12.70 | 14.73 |
| H | 2.29 | 2.79 |
| I | 0.51 | 1.00 |
| J | 0.30 | 0.64 |
| K | 3.53Φ | 4.09Φ |
| L | 3.56 | 4.83 |
| M | 1.14 | 1.40 |
| N | 2.03 | 2.92 |
| O | 1.14 | 1.37 |
| All Dimensions in millimeter | | |

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|---|-------------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 120 | V |
| Maximum DC blocking voltage | V_{DC} | 120 | V |
| Maximum average rectified output current | @ $T_C=120^\circ\text{C}$ $I_{(AV)}$ | 40 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load. | I_{FSM} | 300 | A |
| Non-repetitive peak reverse current | @ $t_p=2\mu\text{s}$ I_{RSM} | 3 | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | °C |

STATIC ELECTRICAL CHARACTERISTICS

| PARAMETER | TEST CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|---------------------------------------|--|--------|------------|--------------|---------------------|
| Forward voltage (Note 4) | $I_F=20\text{A}$ $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$ | V_F | -- 0.68 | 0.82 0.74 | V |
| Leakage current | $V_R=120\text{V}$ $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$ | I_R | -- 15.6 | 60 30 | μA mA |
| Typical junction capacitance (Note 5) | | C_J | 860 | | pF |

THERMAL CHARACTERISTICS

| PARAMETER | SYMBOL | TYP | UNIT |
|---|--------------------------|--------|------|
| Typical thermal resistance (Notes 6, 7) | R_{thJc} R_{thJL} | 1 3 | °C/W |

Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. 300us pulse width, 2% duty cycle.
5. Measured at 1.0MHz and applied voltage of 4.0V DC.
6. Thermal resistance test performed in accordance with JESD-51.
7. The unit mounted on fin type heatsink (85.2mm x 32mm x .24mm).

RATING AND CHARACTERISTIC CURVES

G40E120CTW

FIG.1 FORWARD CURRENT DERATING CURVE

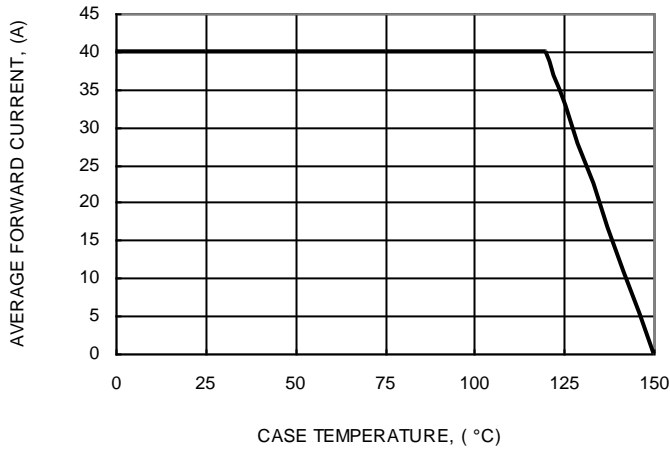


FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

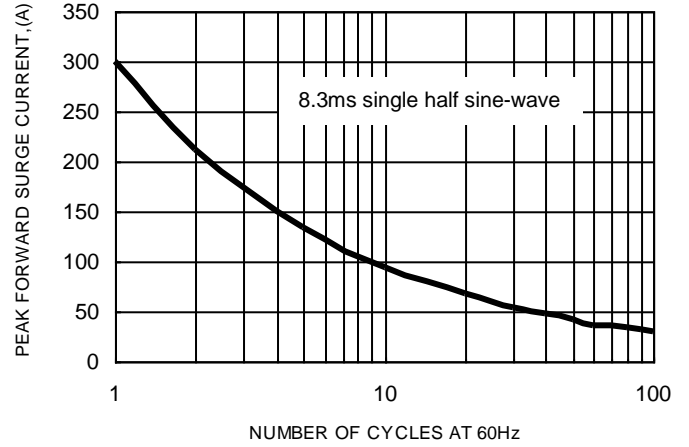


FIG.3 TYPICAL FORWARD CHARACTERISTICS

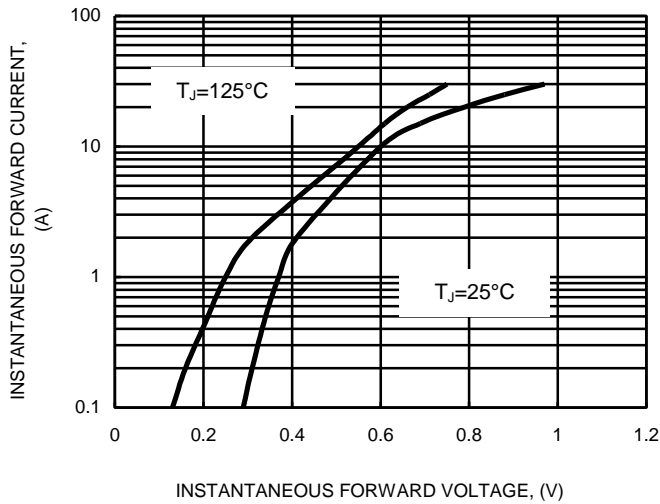


FIG.4 TYPICAL JUNCTION CAPACITANCE

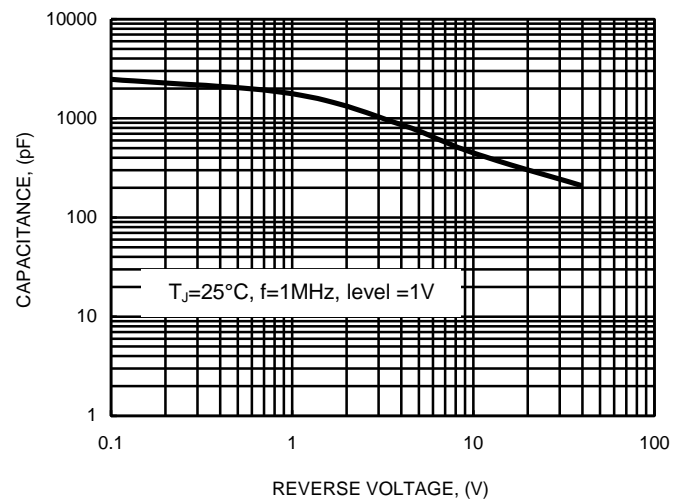
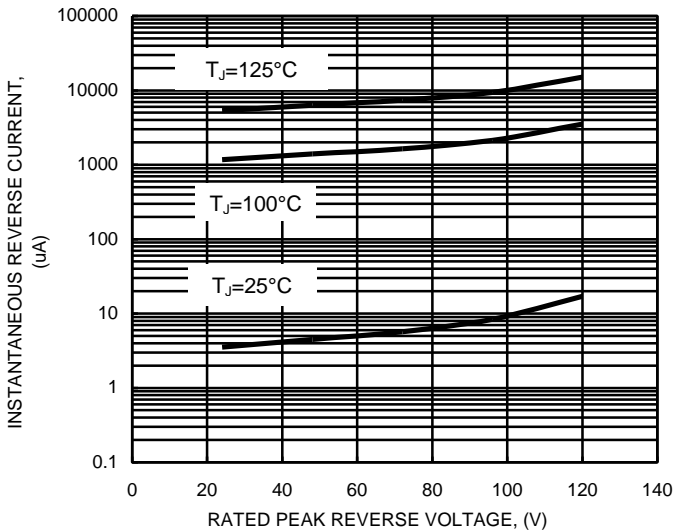


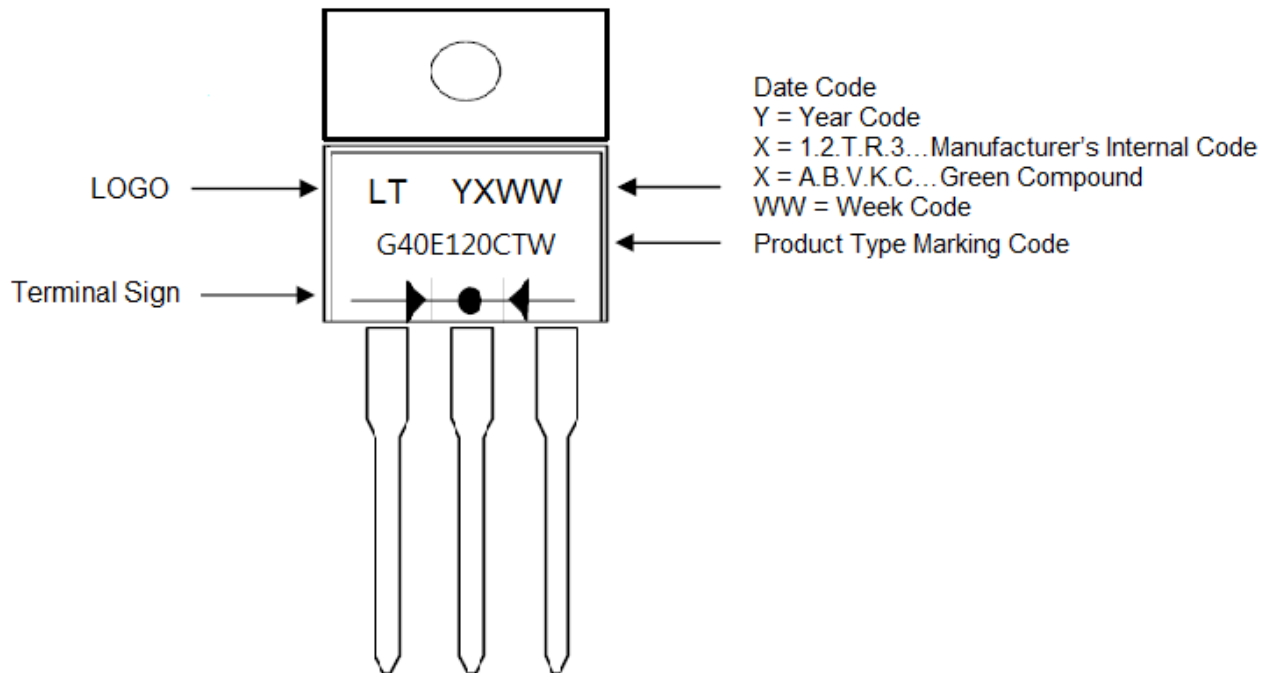
FIG.5 TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

| Part Number | Package | Packing | |
|-------------|----------|---------|---------|
| | | Qty. | Carrier |
| G40E120CTW | TO-220AB | 50 pcs | Tube |

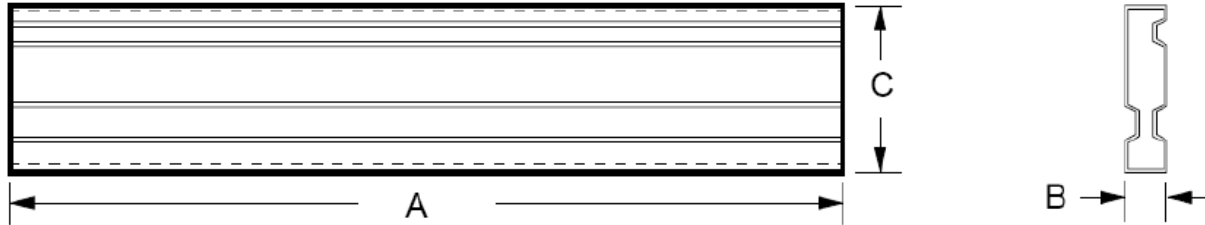
Marking Information:



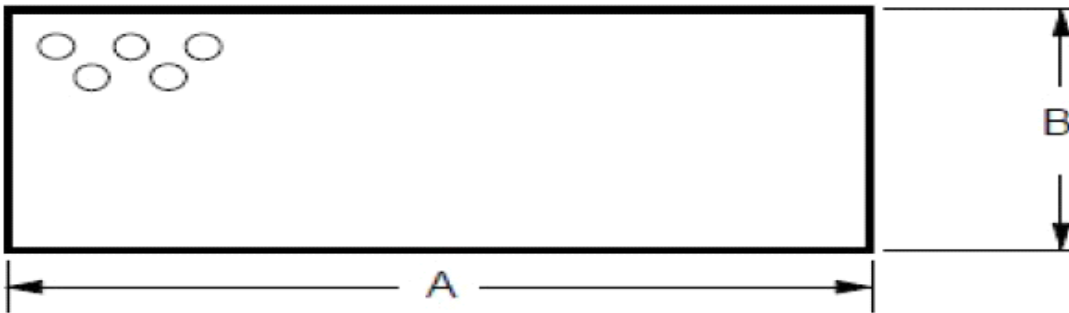
PACKAGING INFORMATION
G40E120CTW

Packaging Information:

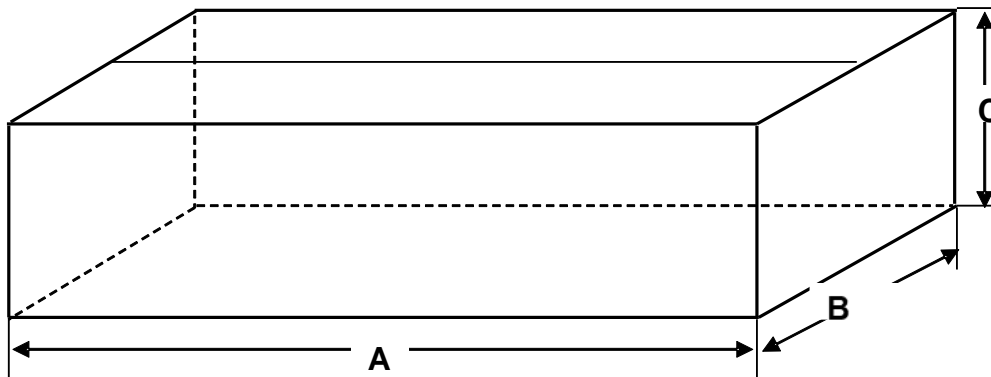
1. TUBE



2. AIR BAG



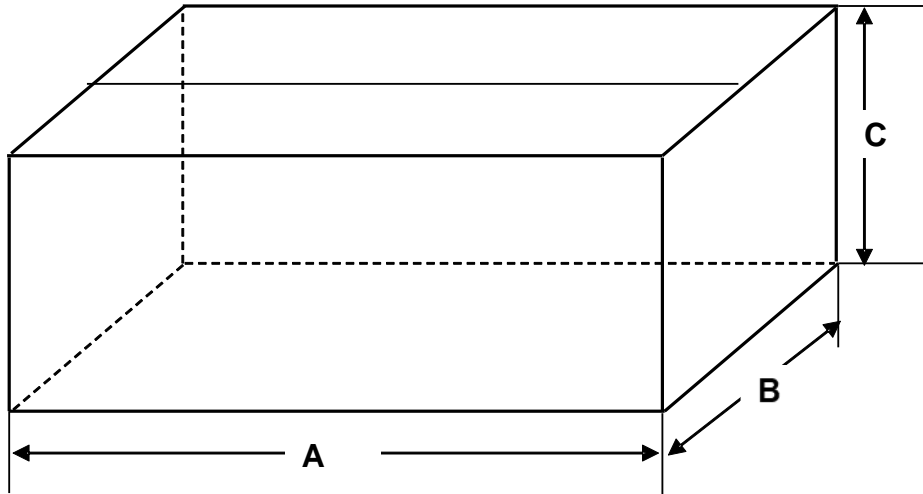
3. INNERBOX



PACKAGING INFORMATION
G40E120CTW

Packaging Information:

4. CARTON



Unit:mm

| P/N | DIMENSION "A" | DIMENSION "B" | DIMENSION "C" | Q'ty/per | REMARK |
|-----------------|--------------------------|--------------------------|--------------------------|-----------------|------------------------|
| TUBE | 536 | 5.6 | 31.8 | 50 | / |
| AIR BAG | 800 | 550 | / | / | / |
| INNERBOX | 555 | 165 | 105 | 2000 | 40TUBE |
| CARTON | 575 | 179 | 225 | 4K | 2 INNER BOX |

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