

**1N6821**  
**(MSASC150H45L)**

**1N6821R**  
**(MSASC150H45LR)**

## Features

- Tungsten/Platinum schottky barrier
- Oxide passivated structure for very low leakage currents
- Guard ring protection for increased reverse energy capability
- Epitaxial structure minimizes forward voltage drop
- Hermetically sealed, low profile ceramic surface mount power package
- Low package inductance
- Very low thermal resistance
- Available as standard polarity (strap-to-anode, 1N6821) and reverse polarity (strap-to-cathode: 1N6821R)

**45 Volts**  
**150 Amps**

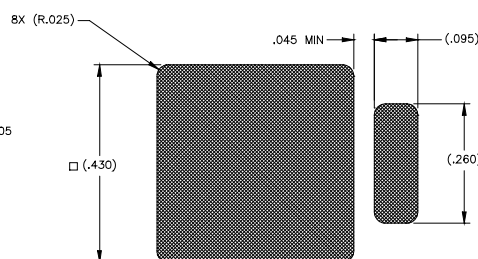
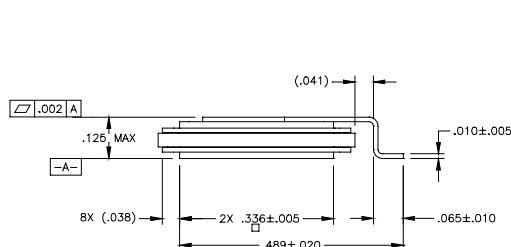
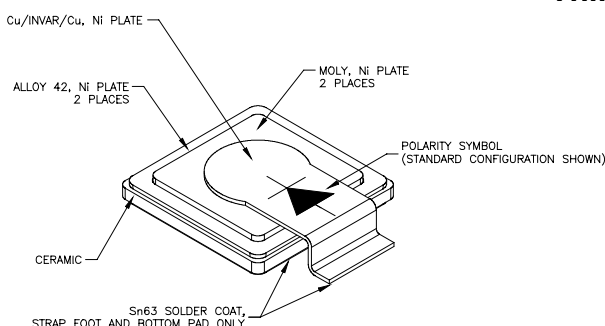
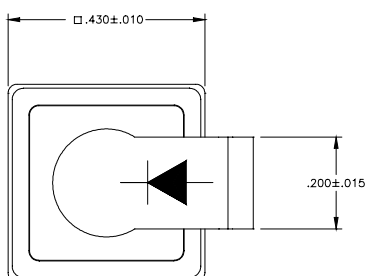
**LOW VOLTAGE**  
**DROP SCHOTTKY**  
**DIODE**

**Maximum Ratings @ 25°C (unless otherwise specified)**

| DESCRIPTION                                                                     | SYMBOL            | MAX.         | UNIT                   |
|---------------------------------------------------------------------------------|-------------------|--------------|------------------------|
| Peak Repetitive Reverse Voltage                                                 | $V_{RRM}$         | 45           | Volts                  |
| Working Peak Reverse Voltage                                                    | $V_{RWM}$         | 45           | Volts                  |
| DC Blocking Voltage                                                             | $V_R$             | 45           | Volts                  |
| Average Rectified Forward Current, $T_c \leq 125^\circ\text{C}$                 | $I_{F(ave)}$      | 150          | Amps                   |
| derating, forward current, $T_c \geq 125^\circ\text{C}$                         | $dI_F/dT$         | 4            | Amps/ $^\circ\text{C}$ |
| Nonrepetitive Peak Surge Current, $t_p = 8.3$ ms, half-sinewave                 | $I_{FSM}$         | 750          | Amps                   |
| Peak Repetitive Reverse Surge Current, $t_p = 1\mu\text{s}$ , $f = 1\text{kHz}$ | $I_{RRM}$         | 2            | Amp                    |
| Junction Temperature Range                                                      | $T_j$             | -55 to +150  | $^\circ\text{C}$       |
| Storage Temperature Range                                                       | $T_{stg}$         | -55 to +150  | $^\circ\text{C}$       |
| Thermal Resistance, Junction to Case:                                           | $\theta_{JC}$     | 0.20<br>0.35 | $^\circ\text{C/W}$     |
|                                                                                 | 1N6821<br>1N6821R |              |                        |

## Mechanical Outline

ThinKey™3



PAD LAYOUT

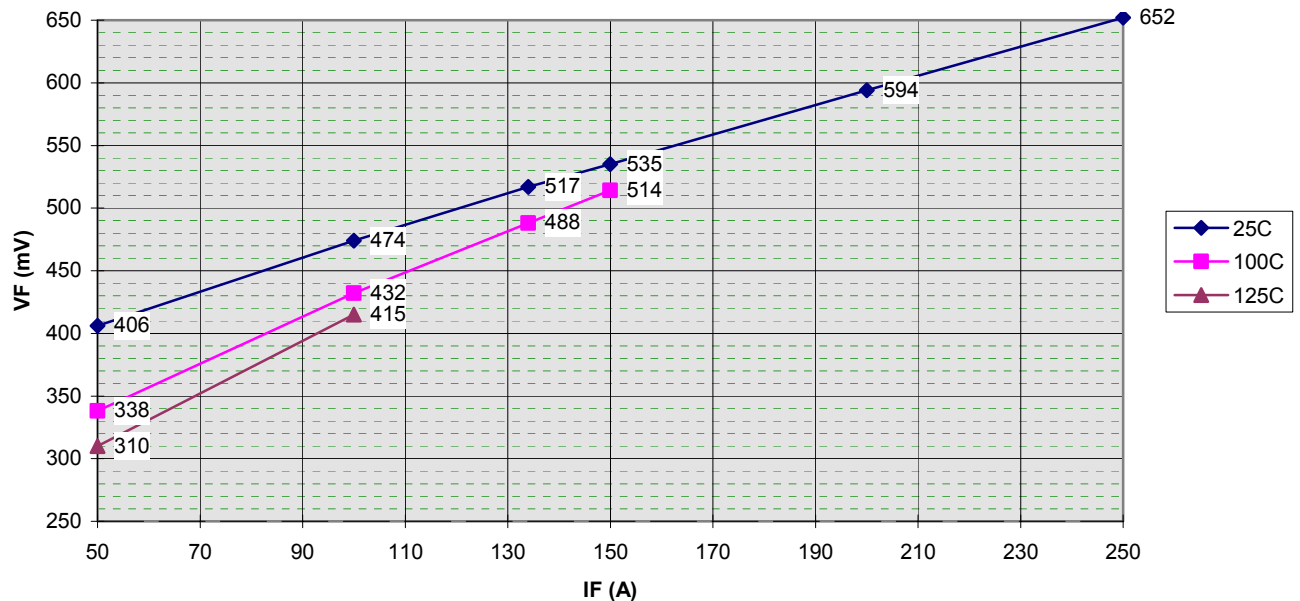
Datasheet# MSC1035B

# 1N6821 (MSASC150H45L) 1N6821R (MSASC150H45LR)

## Electrical Parameters

| DESCRIPTION                                             | SYMBOL            | CONDITIONS            | MIN | TYP. | MAX  | UNIT |
|---------------------------------------------------------|-------------------|-----------------------|-----|------|------|------|
| Reverse (Leakage) Current                               | IR <sub>25</sub>  | VR= 45 Vdc, Tc= 25°C  |     | 1    | 10   | mA   |
|                                                         | IR <sub>100</sub> | VR= 45 Vdc, Tc= 100°C |     | 125  | 400  | mA   |
|                                                         | IR <sub>125</sub> | VR= 45 Vdc, Tc= 125°C |     | 500  |      | mA   |
| Forward Voltage<br>pulse test,<br>pw= 300 μs<br>d/c≤ 2% | VF1               | IF= 20A, Tc= 25°C     |     | 340  | 370  | mV   |
|                                                         | VF2               | IF= 50A, Tc= 25°C     |     | 410  | 450  | mV   |
|                                                         | VF3               | IF= 100A, Tc= 25°C    |     | 475  | 530  | mV   |
|                                                         | VF4               | IF= 150A, Tc= 25°C    |     | 540  | 600  | mV   |
|                                                         | VF5               | IF= 200A, Tc= 25°C    |     | 600  |      | mV   |
|                                                         | VF6               | IF= 50A, Tc= -55°C    |     | 470  | 550  | mV   |
|                                                         | VF7               | IF= 50A, Tc= 125°C    |     | 315  | 380  | mV   |
|                                                         | VF8               | IF= 100A, Tc= 125°C   |     | 415  |      | mV   |
|                                                         | VF9               | IF= 150A, Tc= 100°C   |     | 515  |      | mV   |
|                                                         | VF10              | IF= 10 mA, Tc= 25°C   |     | 135  | -    | mV   |
|                                                         | VF11              | IF= 50 mA, Tc= 25°C   |     | 175  | -    | mV   |
|                                                         | VF12              | IF= 100 mA, Tc= 25°C  |     | 195  | -    | mV   |
| Junction Capacitance                                    | Cj1               | VR= 10 Vdc            |     | 4500 | 4900 | pF   |
|                                                         | Cj2               | VR= 5 Vdc             |     | 6400 |      | pF   |
| Breakdown Voltage                                       | BVR               | IR= 5 mA, Tc= 25°C    |     | 55   |      | V    |
|                                                         |                   | IR= 5 mA, Tc= -55°C   | 45  | 50   |      | V    |

Typical VF data, msasc150h45



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Cj vs VR Typical Curve

