Santa Ana, CA
Microsemi
Progress Powered by Technology

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# 1N6815
# (MSASC25H45K)
# 1N6815R
# (MSASC25H45KR)

**45 Volts**
**25 Amps**

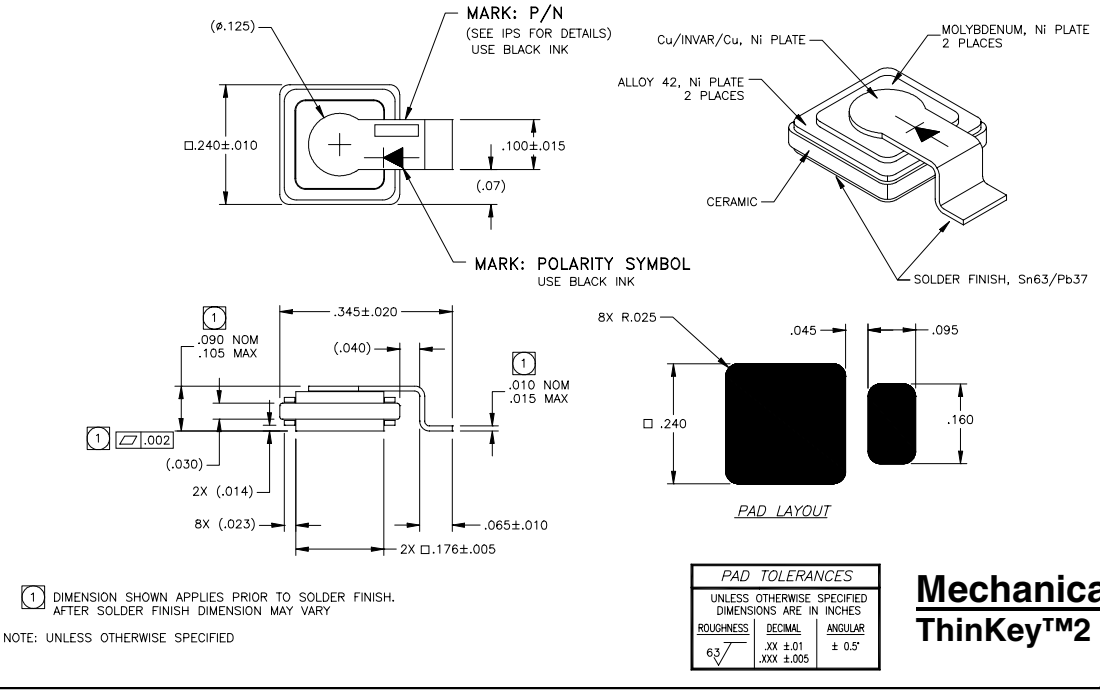
**LOW VOLTAGE DROP SCHOTTKY DIODE**

## Features

- Tungsten/Platinum schottky barrier for very low VF
- 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 is anode: 1N6815) and reverse polarity (strap is cathode: 1N6815R)
- TXV-level (MSASC25H45KV) or S-level (MSASC25H45KS) screening i.a.w. Microsemi Internal Procedure PS11.50 available

## 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, Tc≤ 145°C | | $I_{F(ave)}$ | 25 | Amps |
| derating, forward current, Tc≥ 145°C | | $dI_F/dT$ | (3.3) | Amps/°C |
| Nonrepetitive Peak Surge Current, tp= 8.3 ms, half-sinewave | | $I_{FSM}$ | 125 | Amps |
| Peak Repetitive Reverse Surge Current, tp= 1μs, f= 1kHz | | $I_{RRM}$ | 2 | Amp |
| Junction Temperature Range | | $T_j$ | -55 to +150 | °C |
| Storage Temperature Range | | $T_{stg}$ | -55 to +150 | °C |
| Thermal Resistance, Junction to Case: | 1N6815<br>1N6815R | $\theta_{JC}$ | 1.25<br>1.35 | °C/W |




**Mechanical Outline**
**ThinKey™2**

# 1N6815 (MSASC25H45K)
# 1N6815R (MSASC25H45KR)

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## Electrical Parameters

| DESCRIPTION | SYMBOL | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| Reverse (Leakage) | IR | VR= 45 Vdc, Tc= 25°C | | 300 | 1000 | μA |
| Current | IR | VR= 45 Vdc, Tc= 125°C | | 100 | 150 | mA |
| Forward Voltage | VF | IF= 5A, Tc= 25°C | | 375 | 475 | mV |
| pulse test, | VF | IF= 10A, Tc= 25°C | | 430 | 520 | mV |
| pw= 300 μs | VF | IF= 20A, Tc= 25°C | | 510 | 610 | mV |
| d/c≤ 2% | VF | IF= 50A, Tc= 25°C | | 740 | | mV |
| | VF | IF= 10A, Tc= -55°C | | 480 | 580 | mV |
| | VF | IF= 10A, Tc= 125°C | | 360 | | mV |
| Junction Capacitance | Cj | VR= 10 Vdc | | 525 | 600 | pF |
| | Cj | VR= 5 Vdc | | 725 | | pF |
| Breakdown Voltage | BVR | IR= 1 mA, Tc= 25°C | | 55 | | V |
| | | IR= 1 mA, Tc= -55°C | 45 | 50 | | V |

## VF typical vs. IF

