

# 1N6817 (MSASC25W100K) 1N6817R (MSASC25W100KR)

## Features

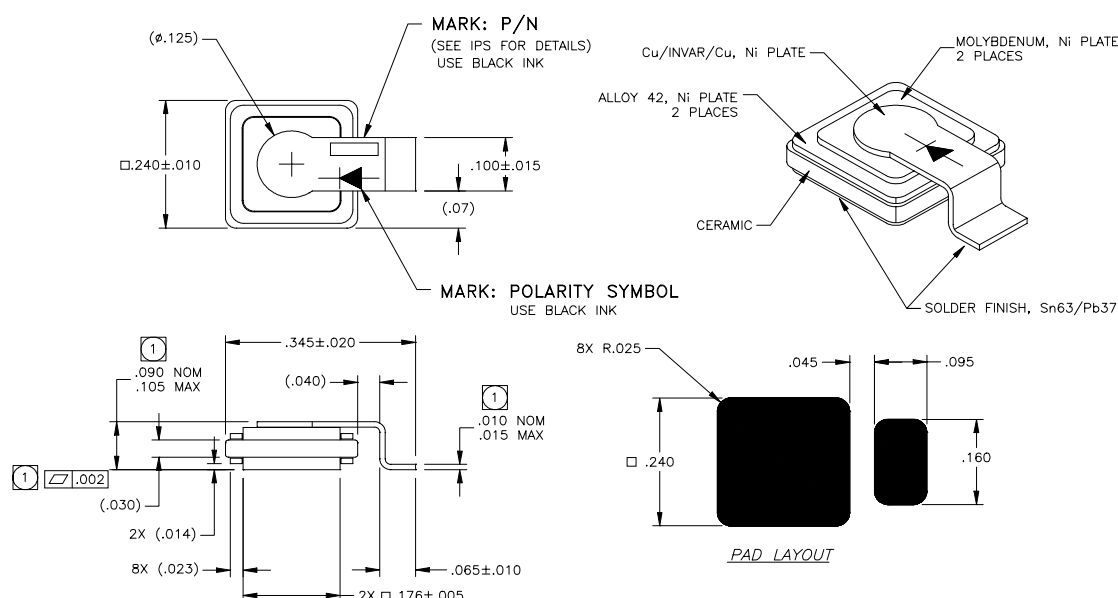
- Tungsten schottky barrier
- Oxide passivated structure
- Guard ring protection for increased reverse energy capability
- Epitaxial structure minimizes forward voltage drop
- Hermetically sealed, low profile ceramic surface mount power package
- Low package inductance
- Very low thermal resistance
- Available as standard polarity (strap is anode: 1N6817) and reverse polarity (strap is cathode: 1N6817R)
- TXV-level screening (MSASC25W100KV) or S-level (MSASC25W100KS) screening i.a.w. Microsemi internal procedure PS11.50 available

**100 Volts  
25 Amps**

**LOW REVERSE  
LEAKAGE  
SCHOTTKY DIODE**

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

| DESCRIPTION                                                                     | SYMBOL        | MAX.                              | UNIT                   |
|---------------------------------------------------------------------------------|---------------|-----------------------------------|------------------------|
| Peak Repetitive Reverse Voltage                                                 | $V_{RRM}$     | 100                               | Volts                  |
| Working Peak Reverse Voltage                                                    | $V_{RWM}$     | 100                               | Volts                  |
| DC Blocking Voltage                                                             | $V_R$         | 100                               | Volts                  |
| Average Rectified Forward Current, $T_c \leq 145^\circ\text{C}$                 | $I_{F(ave)}$  | 25                                | Amps                   |
| derating, forward current, $T_c \geq 145^\circ\text{C}$                         | $dl_F/dT$     | (3.3)                             | Amps/ $^\circ\text{C}$ |
| Nonrepetitive Peak Surge Current, $t_p = 8.3$ ms, half-sinewave                 | $I_{FSM}$     | 120                               | 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 +175                       | $^\circ\text{C}$       |
| Storage Temperature Range                                                       | $T_{stg}$     | -55 to +175                       | $^\circ\text{C}$       |
| Thermal Resistance, Junction to Case:                                           | $\theta_{JC}$ | 1N6817<br>1.25<br>1N6817R<br>1.35 | $^\circ\text{C/W}$     |



① DIMENSION SHOWN APPLIES PRIOR TO SOLDER FINISH.  
AFTER SOLDER FINISH DIMENSION MAY VARY

NOTE: UNLESS OTHERWISE SPECIFIED

| PAD TOLERANCES                                         |                        |         |
|--------------------------------------------------------|------------------------|---------|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES |                        |         |
| ROUGHNESS                                              | DECIMAL                | ANGULAR |
| 63                                                     | .XX ±.01<br>.XXX ±.005 | ± 0.5°  |

**Mechanical Outline  
ThinKey™2**

**1N6817**  
**(MSASC25W100K)**

**1N6817R**  
**(MSASC25W100KR)**

## Electrical Parameters

| DESCRIPTION                                                                       | SYMBOL     | CONDITIONS                                     | MIN | TYP. | MAX  | UNIT          |
|-----------------------------------------------------------------------------------|------------|------------------------------------------------|-----|------|------|---------------|
| Reverse (Leakage)<br>Current                                                      | $IR_{25}$  | $VR = 100\text{ Vdc}, T_c = 25^\circ\text{C}$  |     | 7    | 300  | $\mu\text{A}$ |
|                                                                                   | $IR_{125}$ | $VR = 100\text{ Vdc}, T_c = 125^\circ\text{C}$ |     | 2.5  | 15   | mA            |
| Forward Voltage<br>pulse test,<br>$pw = 300\text{ }\mu\text{s}$<br>$d/c \leq 2\%$ | VF1        | $IF = 5\text{ A}, T_c = 25^\circ\text{C}$      |     | 650  | 725  | mV            |
|                                                                                   | VF2        | $IF = 10\text{ A}, T_c = 25^\circ\text{C}$     |     | 730  | 810  | mV            |
|                                                                                   | VF3        | $IF = 20\text{ A}, T_c = 25^\circ\text{C}$     |     | 810  | 900  | mV            |
|                                                                                   | VF4        | $IF = 50\text{ A}, T_c = 25^\circ\text{C}$     |     | 940  | 1020 | mV            |
|                                                                                   | VF7        | $IF = 100\text{ A}, T_c = 25^\circ\text{C}$    |     | 1060 | -    | mV            |
|                                                                                   | VF5        | $IF = 20\text{ A}, T_c = -55^\circ\text{C}$    |     | 925  | 1025 | mV            |
|                                                                                   | VF6        | $IF = 20\text{ A}, T_c = 125^\circ\text{C}$    |     | 670  | 800  | mV            |
| Junction Capacitance                                                              | Cj1        | $VR = 10\text{ Vdc}$                           |     | 370  | 500  | pF            |
|                                                                                   | Cj2        | $VR = 5\text{ Vdc}$                            |     | 500  |      | pF            |
| Breakdown Voltage                                                                 | BVR        | $IR = 1\text{ mA}, T_c = 25^\circ\text{C}$     | 100 | 120  |      | V             |
|                                                                                   |            | $IR = 1\text{ mA}, T_c = -55^\circ\text{C}$    | 100 |      |      | V             |