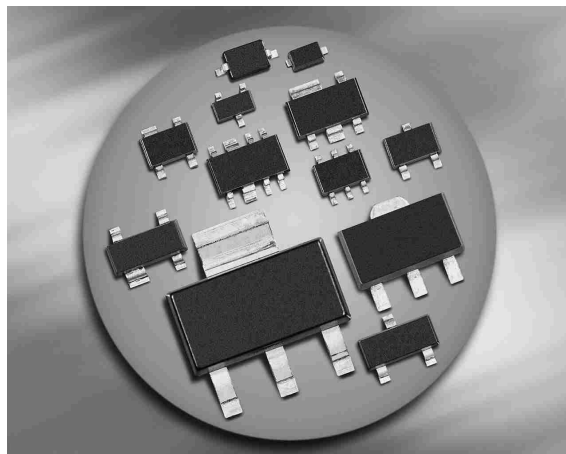
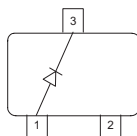
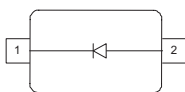


## Silicon PIN Diode

- Current-controlled RF resistor  
for switching and attenuating applications
- Frequency range 1 MHz ... 2 GHz
- Especially useful as antenna switch  
in TV-sat tuners
- Very low harmonics
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101


**BA595**
**BA885**
**BA895**
**BA895-02V**


| Type      | Package | Configuration | $L_S$ (nH) | Marking |
|-----------|---------|---------------|------------|---------|
| BA595     | SOD323  | single        | 1.8        | white R |
| BA885     | SOT23   | single        | 1.8        | PA      |
| BA895*    | SCD80   | single        | 0.6        | RA      |
| BA895-02V | SC79    | single        | 0.6        | 1       |

\* Not for new design

**Maximum Ratings** at  $T_A = 25\text{ °C}$ , unless otherwise specified

| Parameter                   | Symbol    | Value       | Unit |
|-----------------------------|-----------|-------------|------|
| Diode reverse voltage       | $V_R$     | 50          | V    |
| Forward current             | $I_F$     | 50          | mA   |
| Junction temperature        | $T_J$     | 150         | °C   |
| Operating temperature range | $T_{op}$  | -55 ... 125 |      |
| Storage temperature         | $T_{Stg}$ | -55 ... 150 |      |

**Thermal Resistance**

| Parameter                                                               | Symbol     | Value                   | Unit |
|-------------------------------------------------------------------------|------------|-------------------------|------|
| Junction - soldering point <sup>1)</sup><br>BA595, BA885<br>BA895, -02V | $R_{thJS}$ | $\leq 370$<br>$\leq 95$ | K/W  |

<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note AN077 (Thermal Resistance Calculation)

**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

| Parameter | Symbol | Values |      |      | Unit |
|-----------|--------|--------|------|------|------|
|           |        | min.   | typ. | max. |      |

**DC Characteristics**

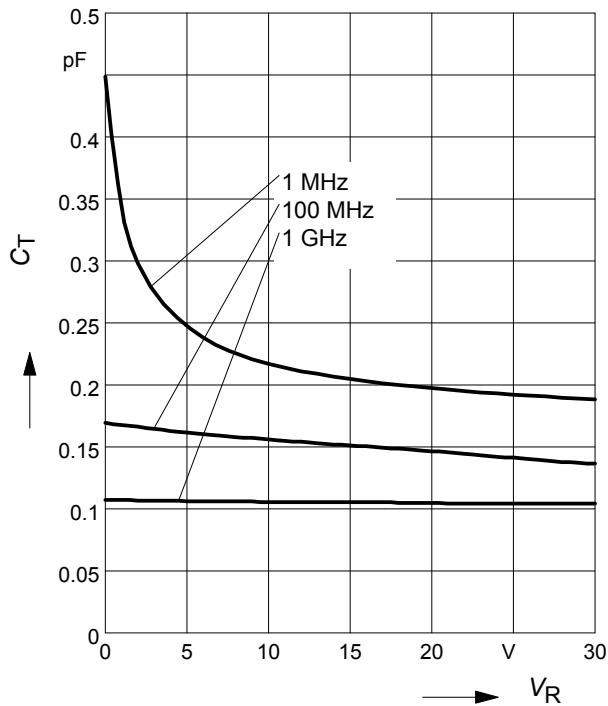
|                                         |       |   |   |     |    |
|-----------------------------------------|-------|---|---|-----|----|
| Reverse current<br>$V_R = 30\text{ V}$  | $I_R$ | - | - | 20  | nA |
| Forward voltage<br>$I_F = 50\text{ mA}$ | $V_F$ | - | - | 1.1 | V  |

**AC Characteristics**

|                                                                                                                                         |             |        |              |            |               |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|--------------|------------|---------------|
| Diode capacitance<br>$V_R = 0\text{ V}$ , $f = 100\text{ MHz}$<br>$V_R = 10\text{ V}$ , $f = 1\text{ MHz}$                              | $C_T$       | -<br>- | 0.26<br>0.22 | 0.4<br>0.6 | pF            |
| Reverse parallel resistance<br>$V_R = 1\text{ V}$ , $f = 100\text{ MHz}$<br>$V_R = 0\text{ V}$ , $f = 1\text{ GHz}$                     | $R_P$       | -<br>- | 50<br>10     | -<br>-     | k $\Omega$    |
| Forward resistance<br>$I_F = 1.5\text{ mA}$ , $f = 100\text{ MHz}$<br>$I_F = 10\text{ mA}$ , $f = 100\text{ MHz}$                       | $r_f$       | -<br>- | 22<br>4.5    | 40<br>7    | $\Omega$      |
| Charge carrier life time<br>$I_F = 10\text{ mA}$ , $I_R = 6\text{ mA}$ , measured at $I_R = 3\text{ mA}$ ,<br>$R_L = 100\text{ }\Omega$ | $\tau_{rr}$ | -      | 1600         | -          | ns            |
| I-region width                                                                                                                          | $W_I$       | -      | 130          | -          | $\mu\text{m}$ |

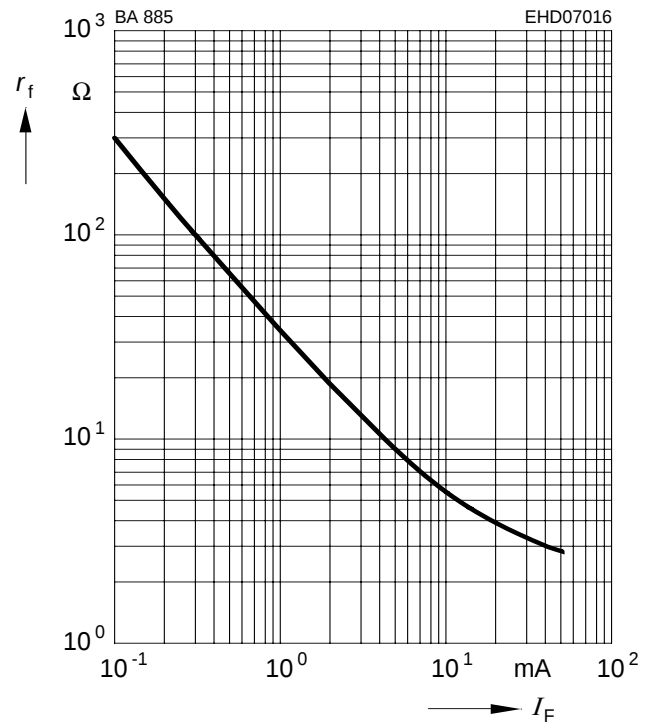
**Diode capacitance  $C_T = f(V_R)$**

$f$  = Parameter



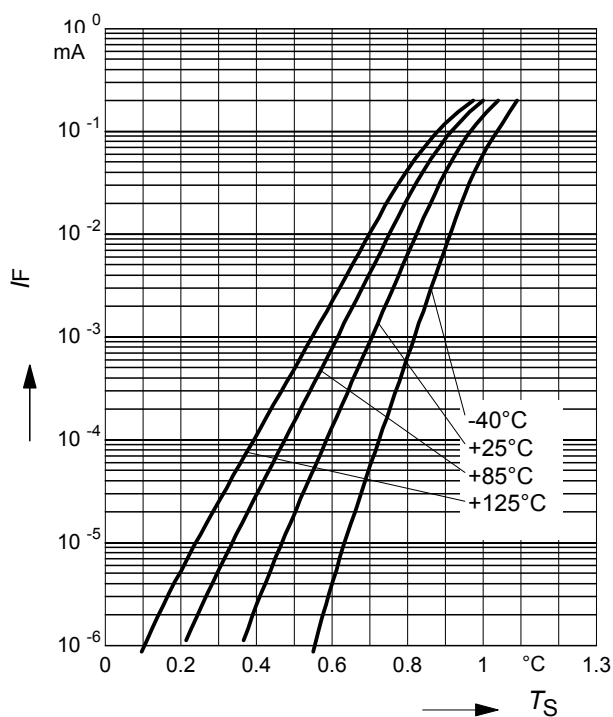
**Forward resistance  $r_f = f(I_F)$**

$f$  = Parameter



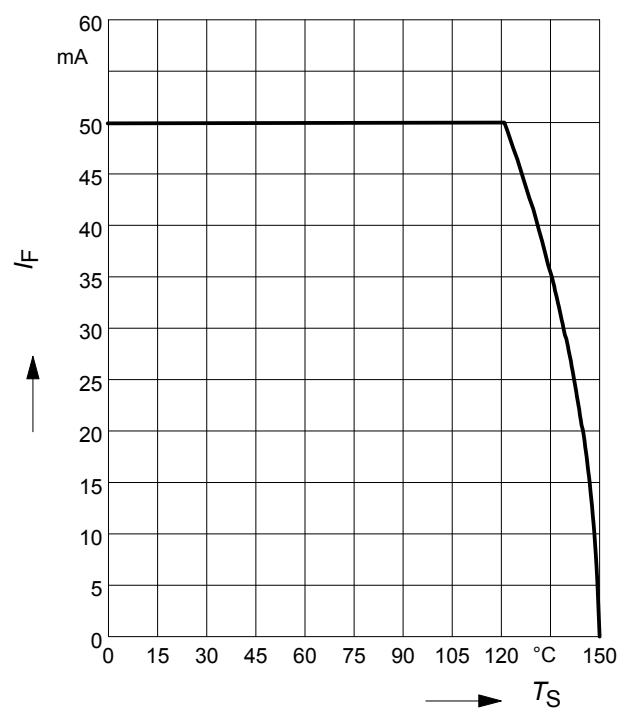
**Forward current  $I_F = f(V_F)$**

$T_A$  = Parameter



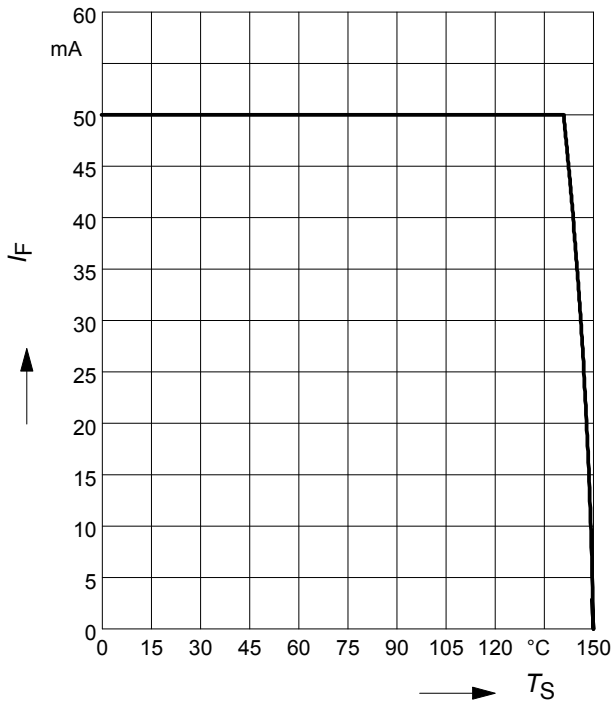
**Forward current  $I_F = f(T_S)$**

BA595



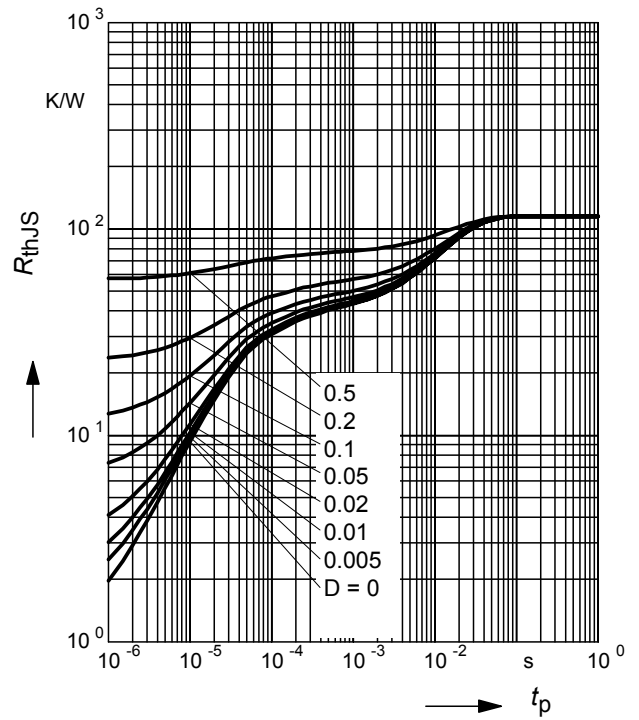
**Forward current  $I_F = f(T_S)$**

BA895, -02V



**Permissible Puls Load  $R_{thJS} = f(t_p)$**

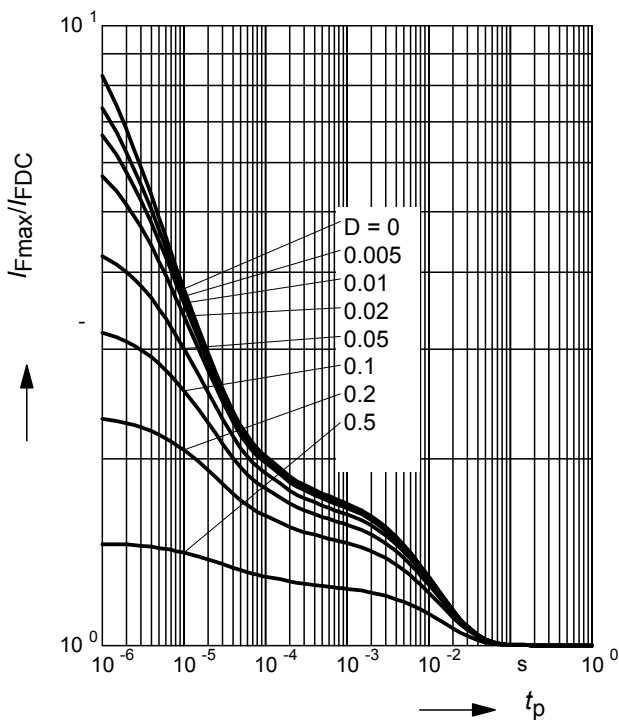
BA595



**Permissible Pulse Load**

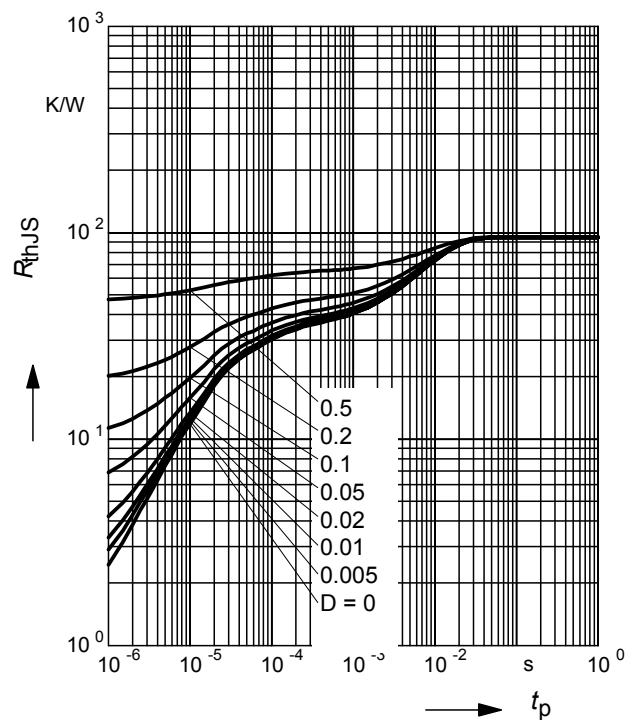
$I_{Fmax}/I_{FDC} = f(t_p)$

BA595



**Permissible Puls Load  $R_{thJS} = f(t_p)$**

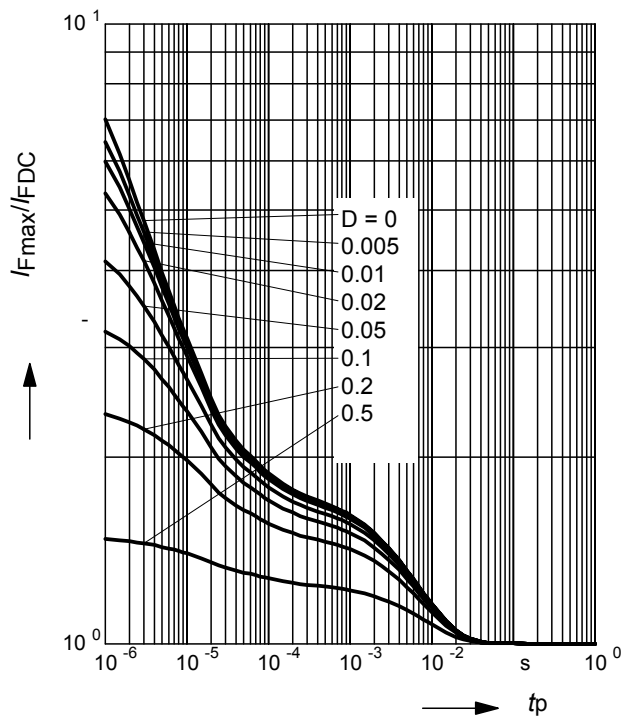
BA895, -02V



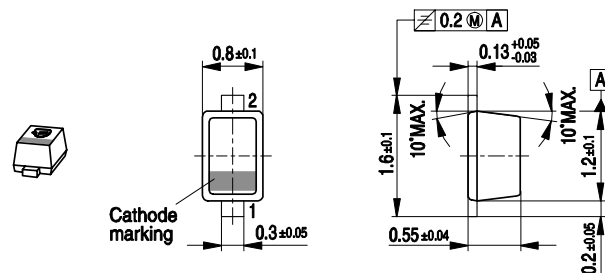
## Permissible Pulse Load

$$I_{Fmax}/I_{FDC} = f(t_p)$$

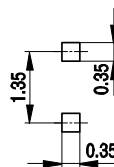
BA895, -02V



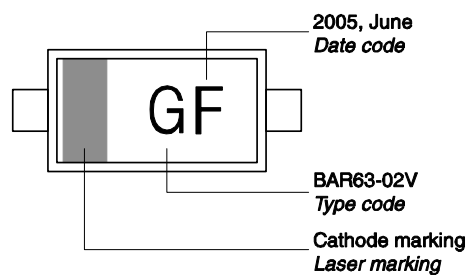
## Package Outline



## Foot Print

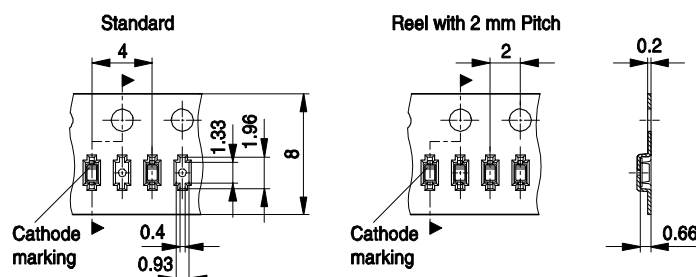


## Marking Layout (Example)

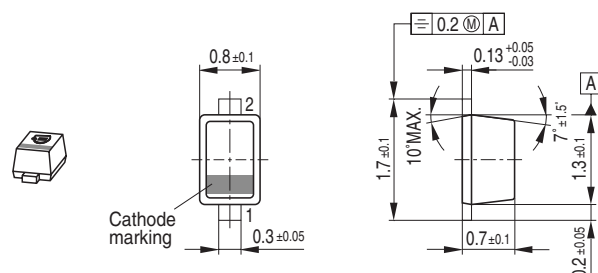


## Standard Packing

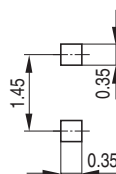
Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel  
 Reel  $\varnothing 180 \text{ mm}$  = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel



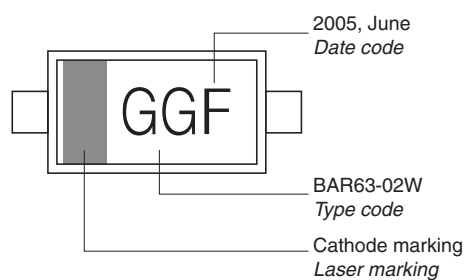
## Package Outline



## Foot Print

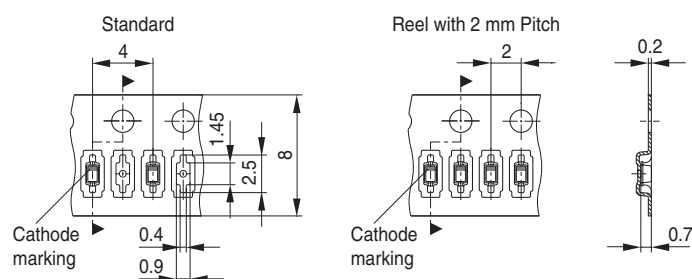


## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel ø330 mm = 10.000 Pieces/Reel

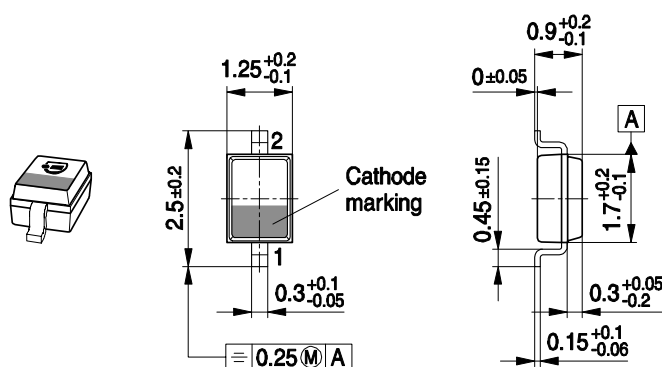


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

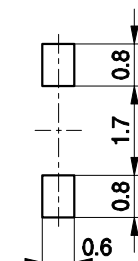
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q    | B    | Q    | b    | q    | B    | Q    | b    | q    | B    | Q    |
| 03    | c    | r    | C    | R    | c    | r    | C    | R    | c    | r    | C    | R    |
| 04    | d    | s    | D    | S    | d    | s    | D    | S    | d    | s    | D    | S    |
| 05    | e    | t    | E    | T    | e    | t    | E    | T    | e    | t    | E    | T    |
| 06    | f    | u    | F    | U    | f    | u    | F    | U    | f    | u    | F    | U    |
| 07    | g    | v    | G    | V    | g    | v    | G    | V    | g    | v    | G    | V    |
| 08    | h    | x    | H    | X    | h    | x    | H    | X    | h    | x    | H    | X    |
| 09    | j    | y    | J    | Y    | j    | y    | J    | Y    | j    | y    | J    | Y    |
| 10    | k    | z    | K    | Z    | k    | z    | K    | Z    | k    | z    | K    | Z    |
| 11    | l    | 2    | L    | 4    | l    | 2    | L    | 4    | l    | 2    | L    | 4    |
| 12    | n    | 3    | N    | 5    | n    | 3    | N    | 5    | n    | 3    | N    | 5    |

1) New Marking Layout for SC75, implemented at October 2005.

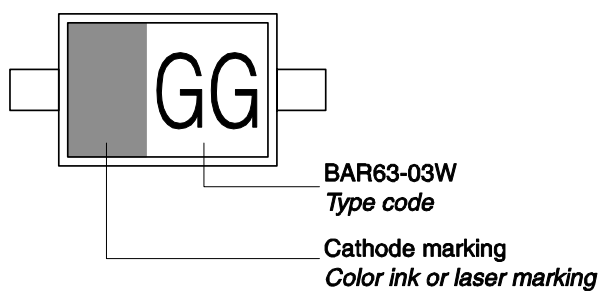
## Package Outline



## Foot Print

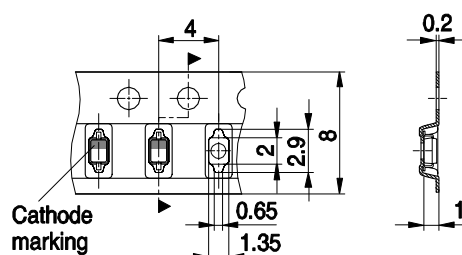


## Marking Layout (Example)

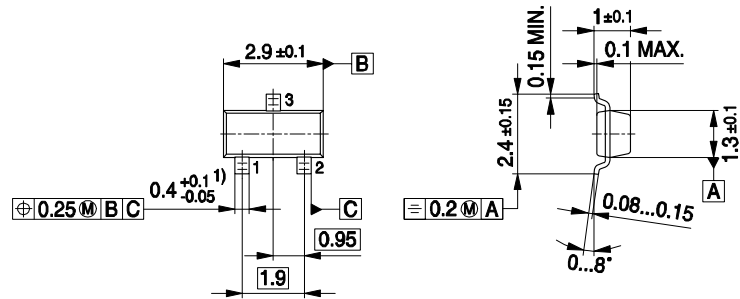
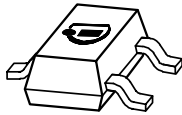


## Standard Packing

Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel  
 Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel



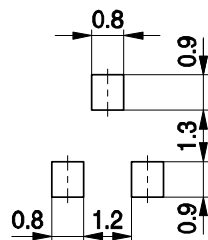
## Package Outline



1) Lead width can be 0.6 max. in dambar area

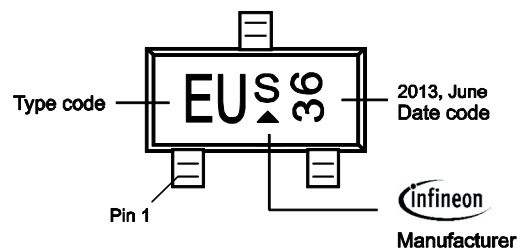
SOT23-PO V08

## Foot Print



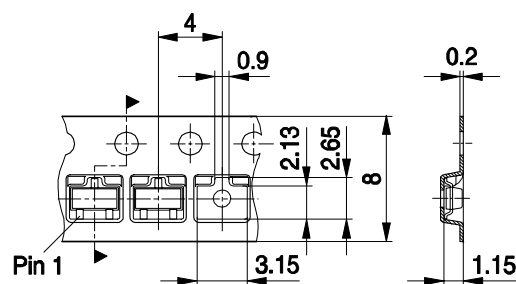
SOT23-FPR V08

## Marking Layout



## Standard Packing

Reel o 180 mm: 3.000 Pieces / Reel  
Reel o 330 mm = 10.000 Pieces / Reel



SOT23-TP V02

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