

■ Features

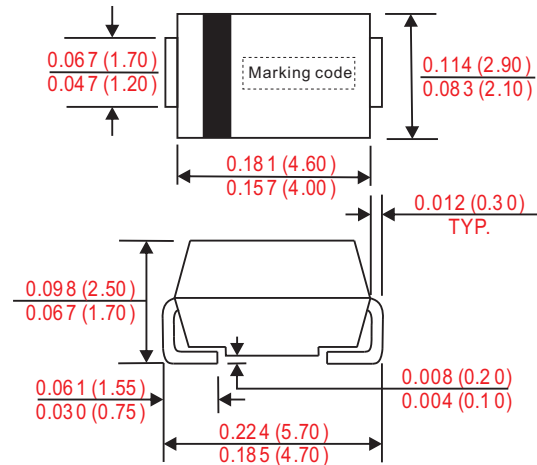
- Low profile surface mounted application in order to optimize board space.
- High current capability, low forward voltage drop.
- High surge capability.
- Superfast recovery time for switching mode application.
- Glass passivated chip junction.
- Suffix "G" indicates Halogen-free part, ex. ES3AAG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AC / SMA
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.002 ounce, 0.055 gram

■ Outline

SMA(DO-214AC)



Dimensions in inches and (millimeters)

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter | Conditions | Symbol | MIN. | TYP. | MAX. | UNIT |
|----------------------------|--|-----------|------|------|------|------|
| Forward rectified current | | I_o | | | 3.0 | A |
| Forward surge current | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | I_{FSM} | | | 100 | A |
| Reverse current | $V_R = V_{RRM}$ $T_A = 25^\circ\text{C}$ | I_R | | | 5.0 | uA |
| | $V_R = V_{RRM}$ $T_A = 125^\circ\text{C}$ | | | | 100 | |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage | C_j | | 45 | | pF |
| Storage temperature | | T_{STG} | -55 | | +150 | °C |

| Symbol | Marking code | Max. repetitive peak reverse voltage V_{RRM} (V) | Max. RMS voltage V_{RMS} (V) | Max. DC blocking voltage V_R (V) | Max. forward voltage @3A, $T_A = 25^\circ\text{C}$ V_F (V) | Max. reverse recovery time(1) T_{rr} (ns) | Operating temperature T_J (°C) |
|--------|--------------|--|--------------------------------|------------------------------------|--|---|----------------------------------|
| ES3AA | ES3A | 50 | 35 | 50 | 0.95 | 35 | -55 ~ +150 |
| ES3BA | ES3B | 100 | 70 | 100 | | | |
| ES3DA | ES3D | 200 | 140 | 200 | | | |
| ES3GA | ES3G | 400 | 280 | 400 | | | |
| ES3JA | ES3J | 600 | 420 | 600 | | | |

Note : 1. $I_F = 0.5A$, $I_R = 1.0A$, $I_{RR} = 0.25A$

■ Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

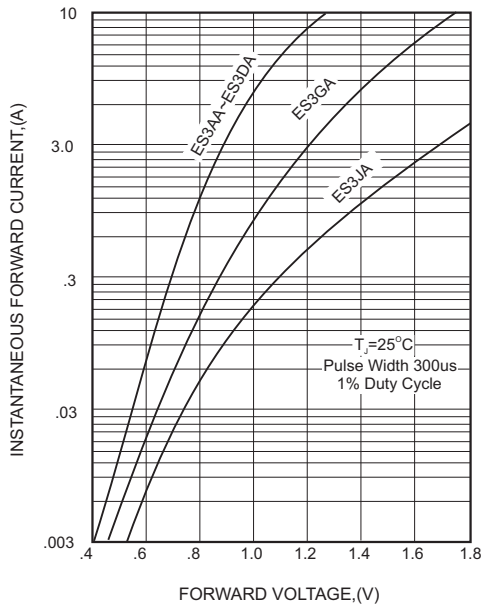


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

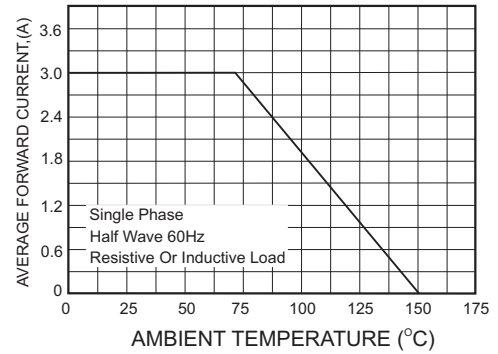
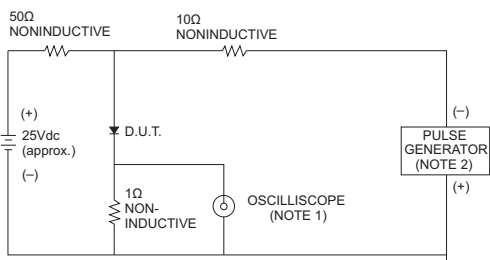


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.
2. Rise Time= 10ns max., Source Impedance= 50 ohms.

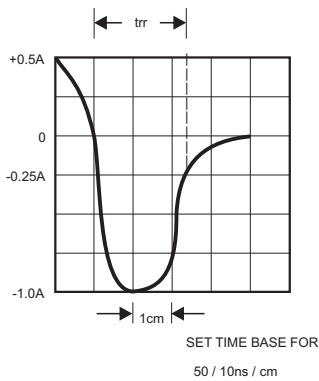


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

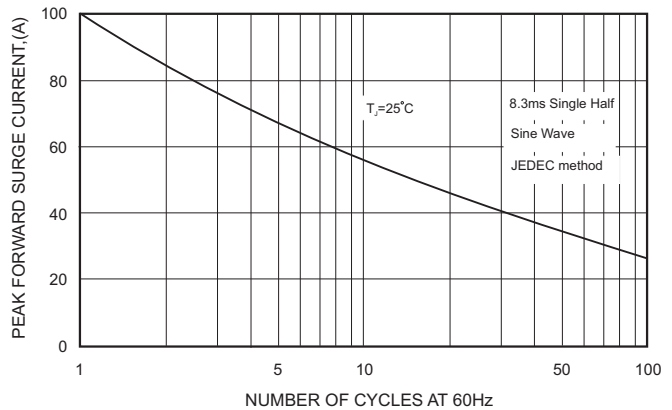
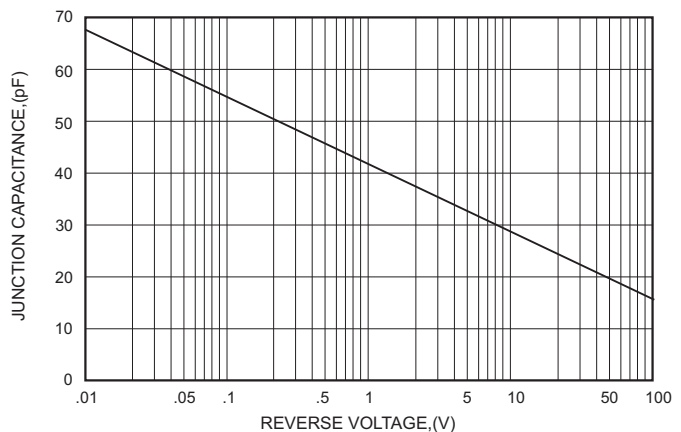
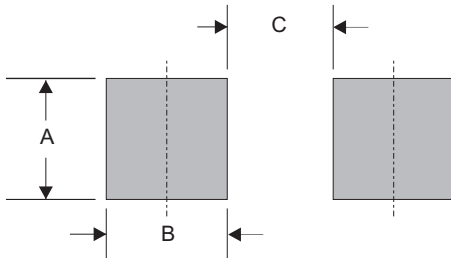


FIG.5-TYPICAL JUNCTION CAPACITANCE



■ SMA foot print



| A | B | C |
|--------------|--------------|--------------|
| 0.068 (1.70) | 0.104 (2.60) | 0.060 (1.50) |

Dimensions in inches and (millimeters)

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