

Protection of RS-485 Transceivers.

#### FEATURES

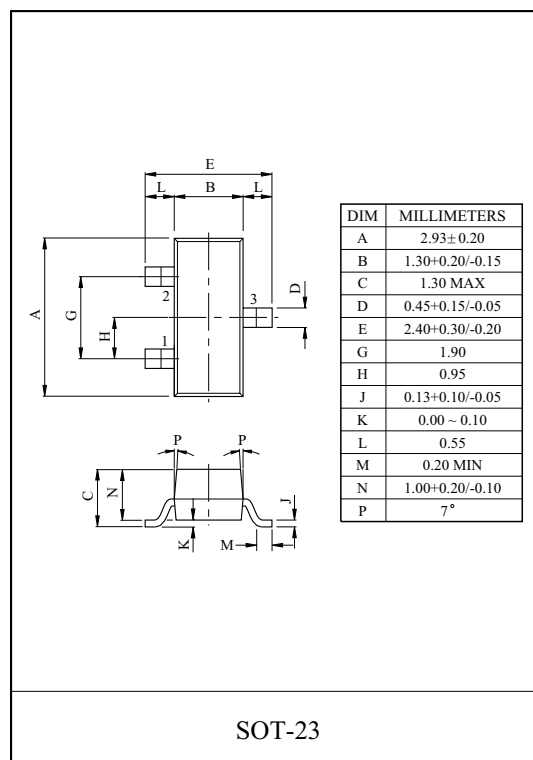
- 400 Watts peak pulse power ( $t_p=8/20 \mu s$ )
- Transient protection for data lines to  
IEC 61000-4-2(ESD) 15kV(Air), 8kV(Contact).
- IEC 61000-4-4(EFT) 40A ( $t_p=5/50 ns$ )
- IEC 61000-4-5(Lightning) 12A ( $t_p=8/20 \mu s$ )
- Standard SOT-23 Package.
- Protects two +12V to -7V lines.
- Low Capacitance.
- Low Clamping Voltage.

#### APPLICATIONS

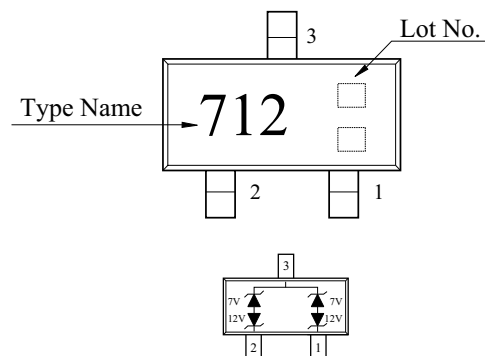
- Protection of RS-485 transceivers with extended common-mode range.
- Security Systems.
- Automatic Teller Machines.
- HFC Systems.
- Networks.

#### MAXIMUM RATING ( $T_a=25^\circ C$ )

| CHARACTERISTIC                          | SYMBOL    | RATING    | UNIT       |
|-----------------------------------------|-----------|-----------|------------|
| Peak Pulse Power ( $t_p=8/20 \mu s$ )   | $P_{PK}$  | 400       | W          |
| Peak Pulse Current ( $t_p=8/20 \mu s$ ) | $I_{PP}$  | 17        | A          |
| Operating Temperature                   | $T_j$     | -55 ~ 125 | $^\circ C$ |
| Storage Temperature                     | $T_{stg}$ | -55 ~ 150 | $^\circ C$ |



#### Marking



# PG712FBS23

## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

Pin 3 to 1 & Pin 3 to 2 (7V TVS)

| CHARACTERISTIC            | SYMBOL    | TEST CONDITION              | MIN. | TYP. | MAX. | UNIT    |
|---------------------------|-----------|-----------------------------|------|------|------|---------|
| Reverse Stand-Off Voltage | $V_{RWM}$ | -                           | -    | -    | 7    | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_t=1mA$                   | 7.5  | -    | -    | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=7V$                | -    | -    | 20   | $\mu A$ |
| Clamping Voltage          | $V_C$     | $I_{pp}=5A, tp=8/20 \mu s$  | -    | -    | 10   | V       |
|                           |           | $I_{pp}=17A, tp=8/20 \mu s$ | -    | -    | 12   |         |
| Junction Capacitance      | $C_J$     | $V_R=0V, f=1MHz$            | -    | -    | 75   | pF      |

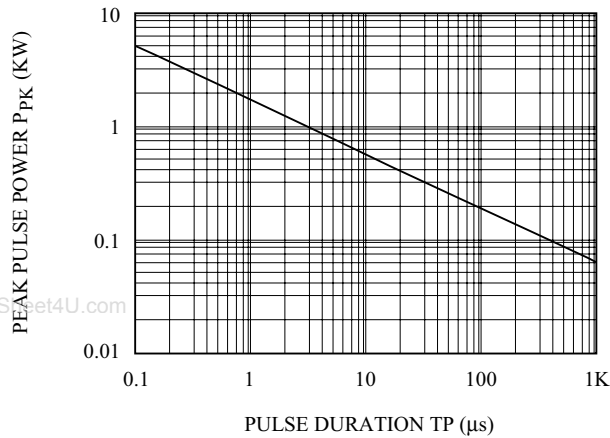
## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

Pin 1 to 3 & Pin 2 to 3 (12V TVS)

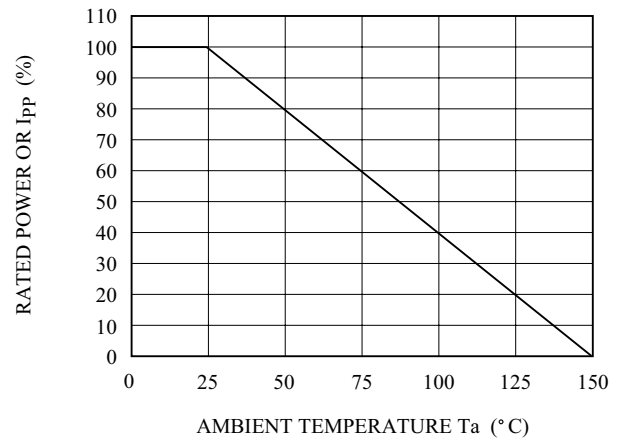
| CHARACTERISTIC            | SYMBOL    | TEST CONDITION              | MIN. | TYP. | MAX. | UNIT    |
|---------------------------|-----------|-----------------------------|------|------|------|---------|
| Reverse Stand-Off Voltage | $V_{RWM}$ | -                           | -    | -    | 12   | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_t=1mA$                   | 13.3 | -    | -    | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=12V$               | -    | -    | 1    | $\mu A$ |
| Clamping Voltage          | $V_C$     | $I_{pp}=5A, tp=8/20 \mu s$  | -    | -    | 20   | V       |
|                           |           | $I_{pp}=17A, tp=8/20 \mu s$ | -    | -    | 26   |         |
| Junction Capacitance      | $C_J$     | $V_R=0V, f=1MHz$            | -    | -    | 75   | pF      |

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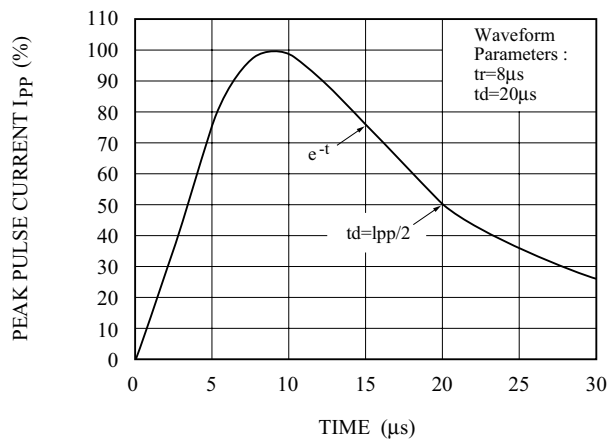
NON-REPETITIVE PEAK PULSE POWER VS. PULSE TIME



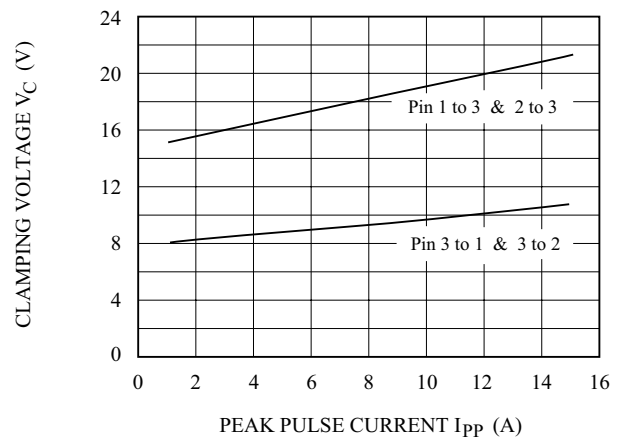
POWER DERATION CURVE



PULSE WAVEFORM



CLAMPING VOLTAGE VS. PEAK PULSE CURRENT



CAPACITANCE VS. REVERSE VOLTAGE

