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# Product Termination Notification

Product Group: SIL/Tuesday June 30, 2026/PTN-SIL-054-2026-REV-0



## Product Obsolescence - SQJ850EP

For further information, please contact your regional Vishay office.

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**Description of Change:** This is to notify you that part number SQJ850EP is being discontinued. As an alternative, we recommend part number SQJ464EP which has overall better performance in the same package (ref Doc no. 65397 Rev. B attached).

**Reason for Change:** Discontinuation of part

**Expected Influence on Quality/Reliability/Performance:** None

**Part Numbers/Series/Families Affected:** SQJ850EP-T1\_GE3, SQJ850EP-T2\_GE3, SQJ850EP-T1\_BE3,

**Vishay Brand(S):** Vishay Siliconix

#### Time Schedule:

Last Time Buy Date: Tuesday December 29, 2026

Last Time Ship Date: Tuesday June 29, 2027

**Sample Availability:** Qualified samples of replacement product are available on request.

**Product Identification:** SQJ464EP-T1\_GE3, SQJ464EP-T1\_BE3

**Qualification Data:** AEC Q101 qualification data of replacement product is available. Qualification PPAP is available on request.

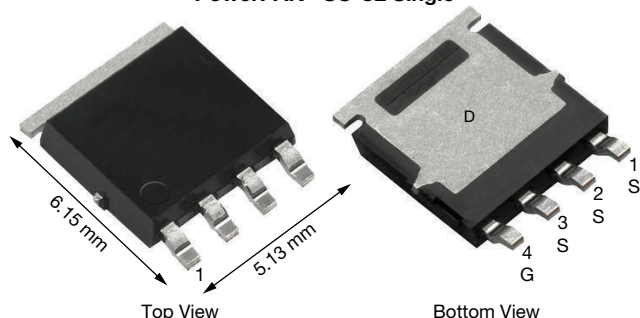
**This PTN is considered approved, without further notification, unless we receive specific customer concerns before Friday July 24, 2026 or as specified by contract.**

**Issued By:** Lance Gurrola, automostechsupport@vishay.com



## Automotive N-Channel 60 V (D-S) 175 °C MOSFET

PowerPAK® SO-8L Single

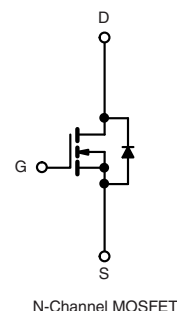


## FEATURES

- TrenchFET® power MOSFET
- AEC-Q101 qualified
- 100 %  $R_g$  and UIS tested
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
FREE



## PRODUCT SUMMARY

|                                               |        |
|-----------------------------------------------|--------|
| $V_{DS}$ (V)                                  | 60     |
| $R_{DS(on)}$ ( $\Omega$ ) at $V_{GS} = 10$ V  | 0.017  |
| $R_{DS(on)}$ ( $\Omega$ ) at $V_{GS} = 4.5$ V | 0.020  |
| $I_D$ (A)                                     | 32     |
| Configuration                                 | Single |

## ORDERING INFORMATION

|                                 |                                                                                                                               |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Package                         | PowerPAK SO-8L                                                                                                                |
| Lead (Pb)-free and halogen-free | SQJ464EP-T1<br>(for detailed order number please see <a href="http://www.vishay.com/doc?79771">www.vishay.com/doc?79771</a> ) |

ABSOLUTE MAXIMUM RATINGS ( $T_C = 25$  °C, unless otherwise noted)

| PARAMETER                                                    | SYMBOL         | LIMIT       | UNIT |
|--------------------------------------------------------------|----------------|-------------|------|
| Drain-source voltage                                         | $V_{DS}$       | 60          | V    |
| Gate-source voltage                                          | $V_{GS}$       | $\pm 20$    | V    |
| Continuous drain current <sup>a</sup>                        | $I_D$          | 32          | A    |
| $T_C = 25$ °C                                                |                | 18          |      |
| Continuous source current (diode conduction) <sup>a</sup>    | $I_S$          | 41          |      |
| Pulsed drain current <sup>b</sup>                            | $I_{DM}$       | 130         |      |
| Single pulse avalanche current                               | $I_{AS}$       | 25          | mJ   |
| Single pulse avalanche energy                                | $E_{AS}$       | 31          |      |
| Maximum power dissipation <sup>b</sup>                       | $P_D$          | 45          | W    |
| $T_C = 25$ °C                                                |                | 15          |      |
| Operating junction and storage temperature range             | $T_J, T_{stg}$ | -55 to +175 | °C   |
| Soldering recommendations (peak temperature) <sup>d, e</sup> |                | 260         |      |

## THERMAL RESISTANCE RATINGS

| PARAMETER                | SYMBOL     | LIMIT | UNIT |
|--------------------------|------------|-------|------|
| Junction-to-ambient      | $R_{thJA}$ | 70    | °C/W |
| Junction-to-case (drain) | $R_{thJC}$ | 3.3   |      |

## Notes

- a. Package limited
- b. Pulse test; pulse width  $\leq 300$   $\mu$ s, duty cycle  $\leq 2$  %
- c. When mounted on 1" square PCB (FR4 material)
- d. See solder profile ([www.vishay.com/doc?73257](http://www.vishay.com/doc?73257)). The PowerPAK SO-8L is a leadless package. The end of the lead terminal is exposed copper (not plated) as a result of the singulation process in manufacturing. A solder fillet at the exposed copper tip cannot be guaranteed and is not required to ensure adequate bottom side solder interconnection
- e. Rework conditions: manual soldering with a soldering iron is not recommended for leadless components



| SPECIFICATIONS (T <sub>C</sub> = 25 °C, unless otherwise noted) |                     |                                                                                                                      |                                                 |      |        |        |      |
|-----------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------|--------|--------|------|
| PARAMETER                                                       | SYMBOL              | TEST CONDITIONS                                                                                                      |                                                 | MIN. | TYP.   | MAX.   | UNIT |
| Static                                                          |                     |                                                                                                                      |                                                 |      |        |        |      |
| Drain-source breakdown voltage                                  | V <sub>DS</sub>     | V <sub>GS</sub> = 0, I <sub>D</sub> = 250 μA                                                                         |                                                 | 60   | -      | -      | V    |
| Gate-source threshold voltage                                   | V <sub>GS(th)</sub> | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 μA                                                          |                                                 | 1.5  | 2.0    | 2.5    |      |
| Gate-source leakage                                             | I <sub>GSS</sub>    | V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ± 20 V                                                                      |                                                 | -    | -      | ± 100  | nA   |
| Zero gate voltage drain current                                 | I <sub>DSS</sub>    | V <sub>GS</sub> = 0 V                                                                                                | V <sub>DS</sub> = 60 V                          | -    | -      | 1      | μA   |
|                                                                 |                     | V <sub>GS</sub> = 0 V                                                                                                | V <sub>DS</sub> = 60 V, T <sub>J</sub> = 125 °C | -    | -      | 50     |      |
|                                                                 |                     | V <sub>GS</sub> = 0 V                                                                                                | V <sub>DS</sub> = 60 V, T <sub>J</sub> = 175 °C | -    | -      | 150    |      |
| On-state drain current <sup>a</sup>                             | I <sub>D(on)</sub>  | V <sub>GS</sub> = 10 V                                                                                               | V <sub>DS</sub> ≥ 5 V                           | 30   | -      | -      | A    |
| Drain-source on-state resistance <sup>a</sup>                   | R <sub>DS(on)</sub> | V <sub>GS</sub> = 10 V                                                                                               | I <sub>D</sub> = 7.1 A                          | -    | 0.0140 | 0.0170 | Ω    |
|                                                                 |                     | V <sub>GS</sub> = 4.5 V                                                                                              | I <sub>D</sub> = 6.5 A                          | -    | 0.0165 | 0.0200 |      |
|                                                                 |                     | V <sub>GS</sub> = 10 V                                                                                               | I <sub>D</sub> = 7.1 A, T <sub>J</sub> = 125 °C | -    | -      | 0.0310 |      |
|                                                                 |                     | V <sub>GS</sub> = 10 V                                                                                               | I <sub>D</sub> = 7.1 A, T <sub>J</sub> = 175 °C | -    | -      | 0.0410 |      |
| Forward transconductance <sup>b</sup>                           | g <sub>fs</sub>     | V <sub>DS</sub> = 15 V, I <sub>D</sub> = 7.1 A                                                                       |                                                 | -    | 60     | -      | S    |
| Dynamic <sup>b</sup>                                            |                     |                                                                                                                      |                                                 |      |        |        |      |
| Input capacitance                                               | C <sub>iss</sub>    | V <sub>GS</sub> = 0 V                                                                                                | V <sub>DS</sub> = 30 V, f = 1 MHz               | -    | 1670   | 2086   | pF   |
| Output capacitance                                              | C <sub>Oss</sub>    |                                                                                                                      |                                                 | -    | 145    | 181    |      |
| Reverse transfer capacitance                                    | C <sub>rss</sub>    |                                                                                                                      |                                                 | -    | 59     | 74     |      |
| Total gate charge <sup>c</sup>                                  | Q <sub>g</sub>      | V <sub>GS</sub> = 10 V                                                                                               | V <sub>DS</sub> = 30 V, I <sub>D</sub> = 6 A    | -    | 29     | 44     | nC   |
| Gate-source charge <sup>c</sup>                                 | Q <sub>gs</sub>     |                                                                                                                      |                                                 | -    | 4.9    | -      |      |
| Gate-drain charge <sup>c</sup>                                  | Q <sub>gd</sub>     |                                                                                                                      |                                                 | -    | 4.9    | -      |      |
| Gate resistance                                                 | R <sub>g</sub>      | f = 1 MHz                                                                                                            |                                                 | 0.45 | 0.91   | 2      | Ω    |
| Turn-on delay time <sup>c</sup>                                 | t <sub>d(on)</sub>  | V <sub>DD</sub> = 30 V, R <sub>L</sub> = 30 Ω<br>I <sub>D</sub> ≅ 1 A, V <sub>GEN</sub> = 10 V, R <sub>g</sub> = 6 Ω |                                                 | -    | 7.7    | 11.5   | ns   |
| Rise time <sup>c</sup>                                          | t <sub>r</sub>      |                                                                                                                      |                                                 | -    | 8.9    | 13.4   |      |
| Turn-off delay time <sup>c</sup>                                | t <sub>d(off)</sub> |                                                                                                                      |                                                 | -    | 25.4   | 38     |      |
| Fall time <sup>c</sup>                                          | t <sub>f</sub>      |                                                                                                                      |                                                 | -    | 8.8    | 13.2   |      |
| Source-Drain Diode Ratings and Characteristics <sup>b</sup>     |                     |                                                                                                                      |                                                 |      |        |        |      |
| Pulsed current <sup>a</sup>                                     | I <sub>SM</sub>     |                                                                                                                      |                                                 | -    | -      | 130    | A    |
| Forward voltage                                                 | V <sub>SD</sub>     | I <sub>F</sub> = 4.8 A, V <sub>GS</sub> = 0                                                                          |                                                 | -    | 0.8    | 1.2    | V    |

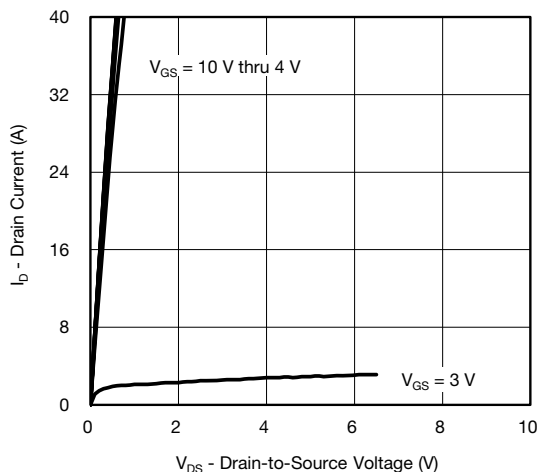
**Notes**

- a. Pulse test; pulse width  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$   
b. Guaranteed by design, not subject to production testing  
c. Independent of operating temperature

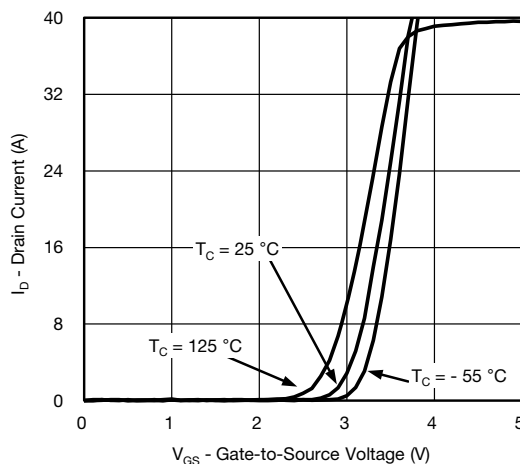
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.



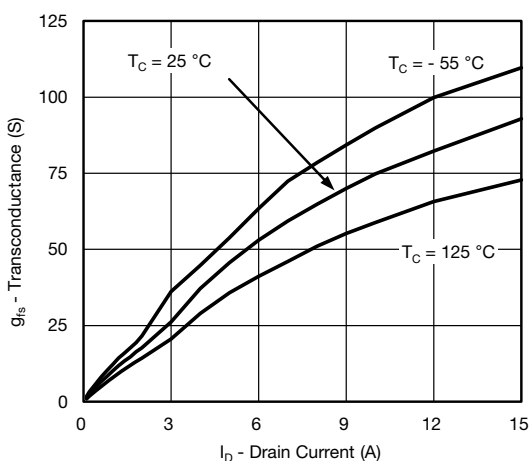
**TYPICAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise noted)



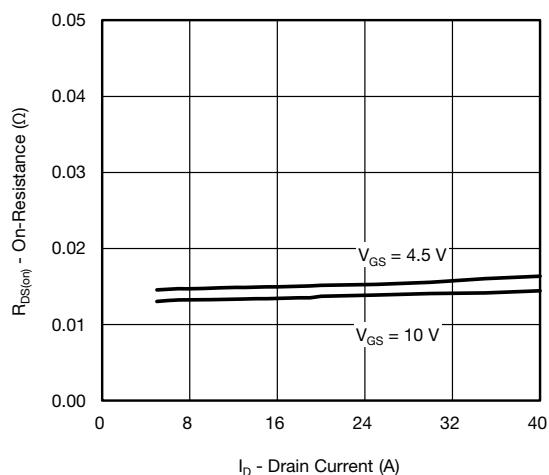
**Output Characteristics**



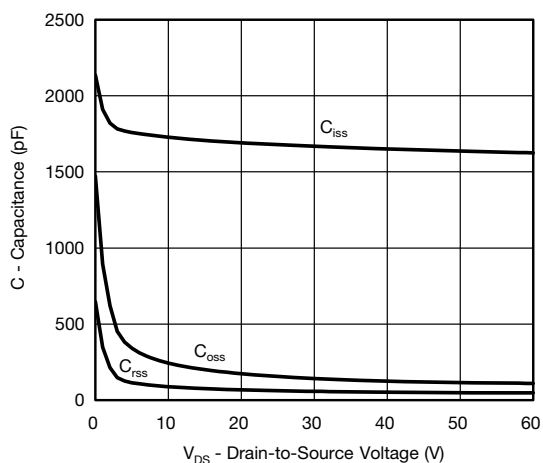
**Transfer Characteristics**



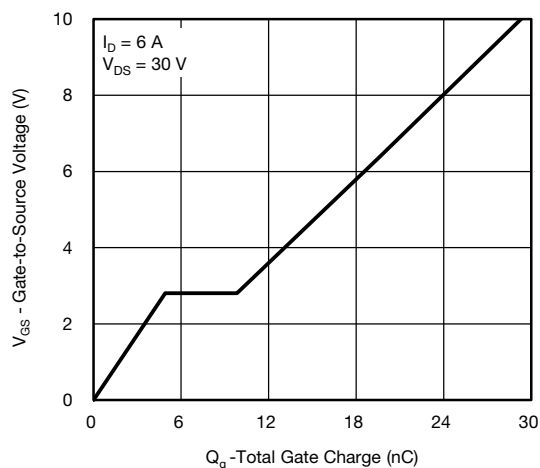
**Transconductance**



**On-Resistance vs. Drain Current**



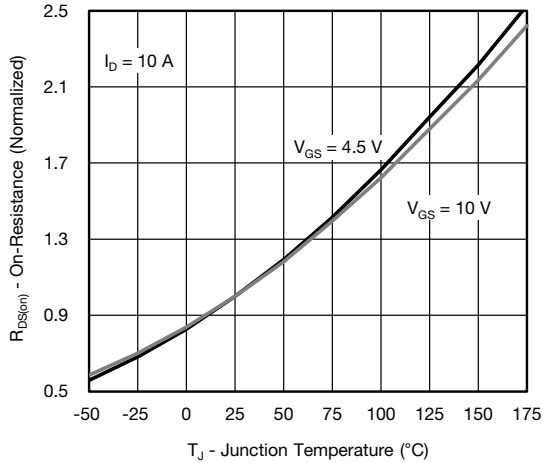
**Capacitance**



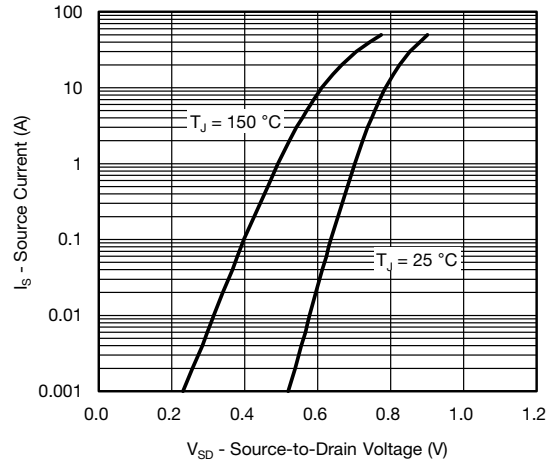
**Gate Charge**



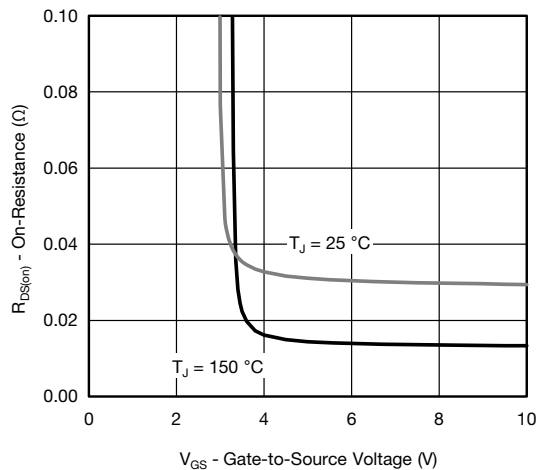
**TYPICAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise noted)



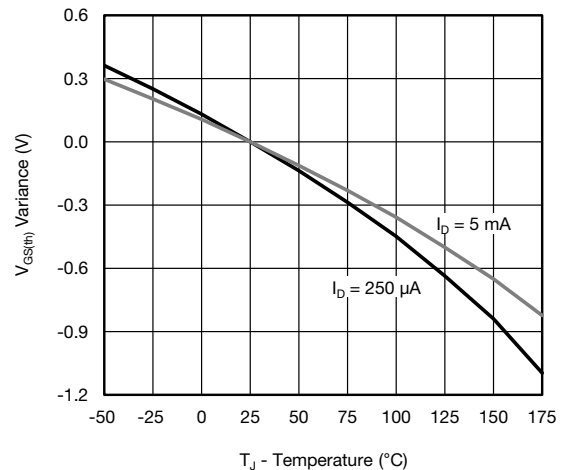
**On-Resistance vs. Junction Temperature**



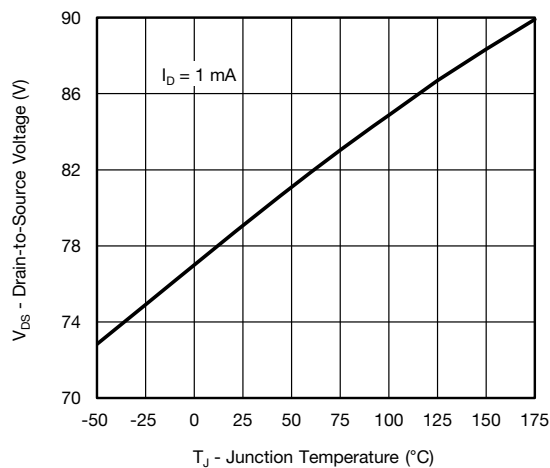
**Source Drain Diode Forward Voltage**



**On-Resistance vs. Gate-to-Source Voltage**



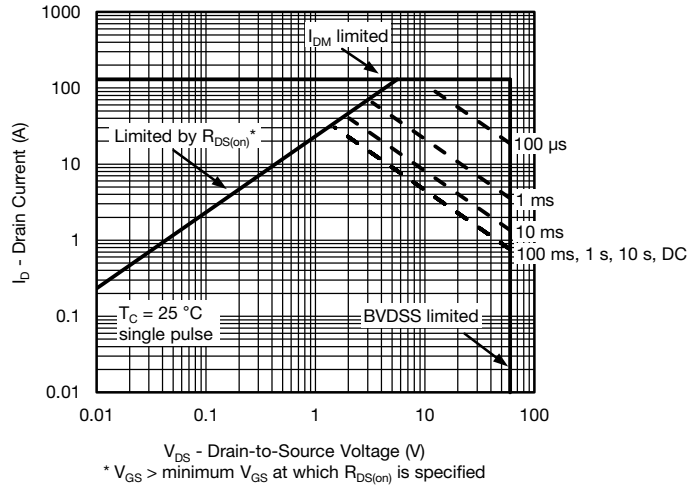
**Threshold Voltage**



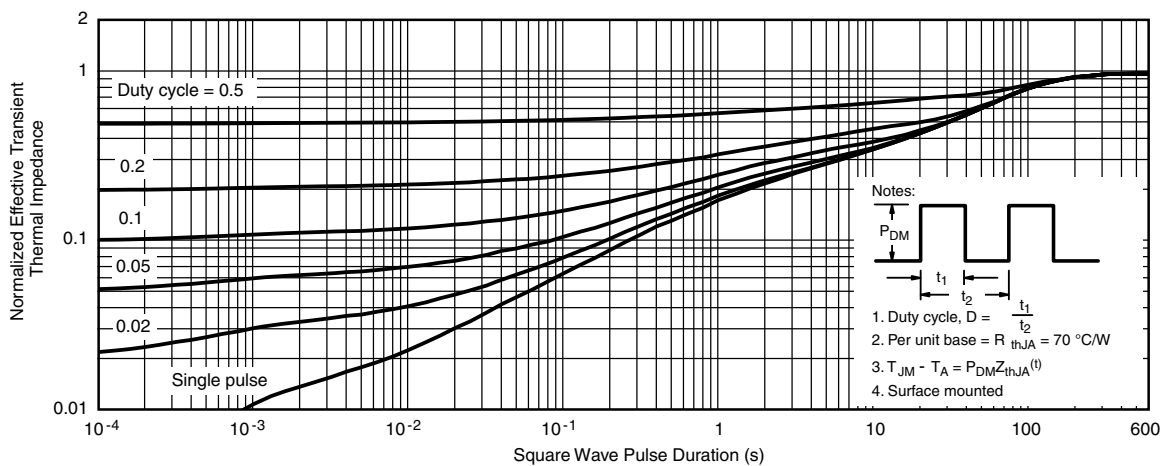
**Drain Source Breakdown vs. Junction Temperature**



**THERMAL RATINGS** ( $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise noted)



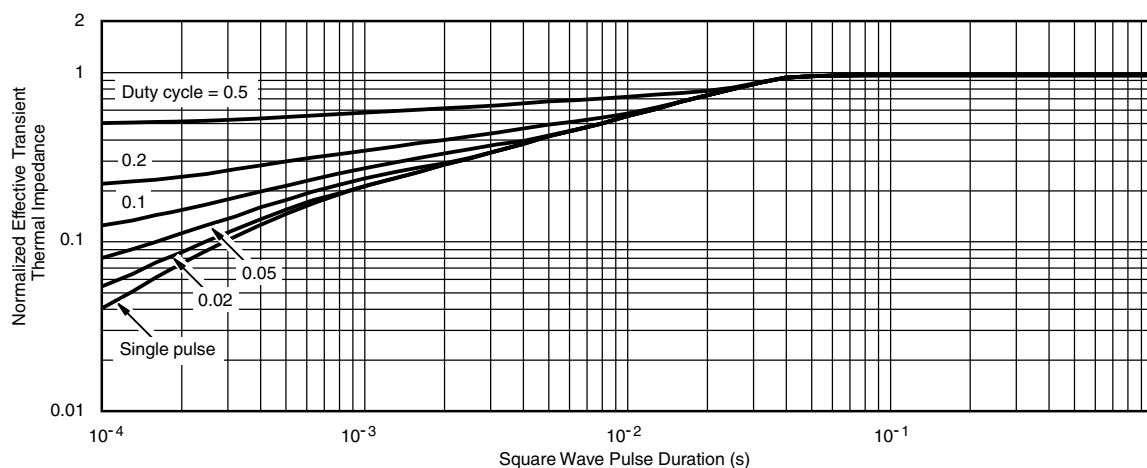
**Safe Operating Area**



**Normalized Thermal Transient Impedance, Junction-to-Ambient**



**THERMAL RATINGS** ( $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise noted)



**Normalized Thermal Transient Impedance, Junction-to-Case**

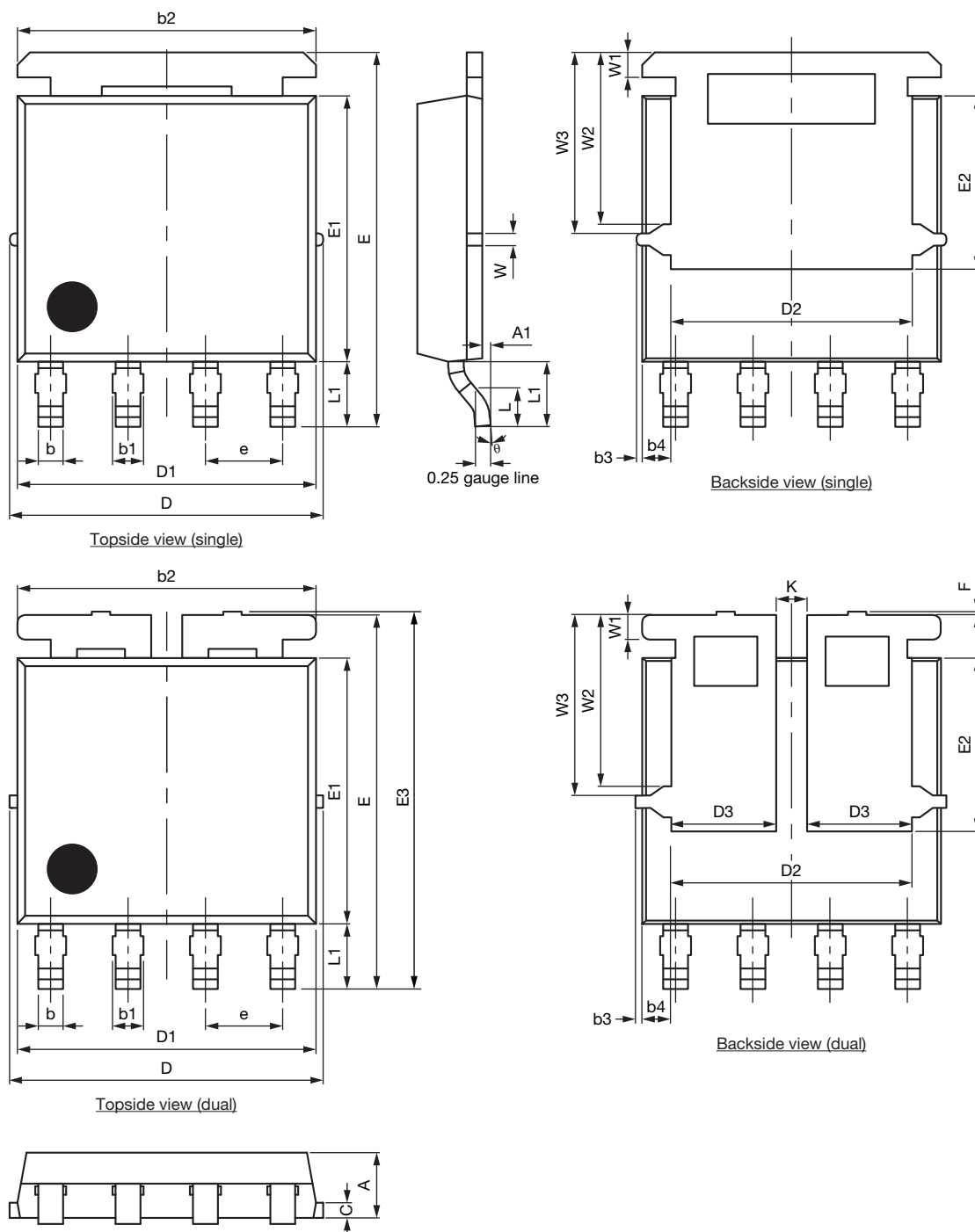
**Note**

- The characteristics shown in the two graphs
  - Normalized Transient Thermal Impedance Junction-to-Ambient ( $25\text{ }^{\circ}\text{C}$ )
  - Normalized Transient Thermal Impedance Junction-to-Case ( $25\text{ }^{\circ}\text{C}$ )are given for general guidelines only to enable the user to get a "ball park" indication of part capabilities. The data are extracted from single pulse transient thermal impedance characteristics which are developed from empirical measurements. The latter is valid for the part mounted on printed circuit board - FR4, size 1" x 1" x 0.062", double sided with 2 oz. copper, 100 % on both sides. The part capabilities can widely vary depending on actual application parameters and operating conditions

Vishay Siliconix maintains worldwide manufacturing capability. Products may be manufactured at one of several qualified locations. Reliability data for Silicon Technology and Package Reliability represent a composite of all qualified locations. For related documents such as package/tape drawings, part marking, and reliability data, see [www.vishay.com/ppg?65397](http://www.vishay.com/ppg?65397).



## PowerPAK® SO-8L Case Outline 2



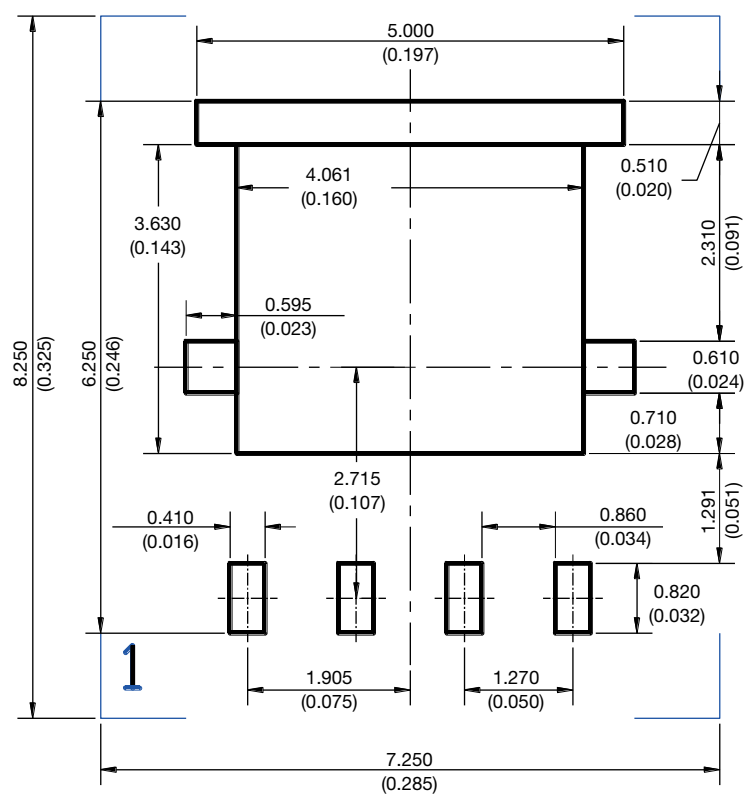


| DIM.                                           | MILLIMETERS |      |       | INCHES    |       |       |
|------------------------------------------------|-------------|------|-------|-----------|-------|-------|
|                                                | MIN.        | NOM. | MAX.  | MIN.      | NOM.  | MAX.  |
| A                                              | 1.00        | 1.07 | 1.14  | 0.039     | 0.042 | 0.045 |
| A1                                             | 0.00        | -    | 0.127 | 0.00      | -     | 0.005 |
| b                                              | 0.33        | 0.41 | 0.48  | 0.013     | 0.016 | 0.019 |
| b1                                             | 0.44        | 0.51 | 0.58  | 0.017     | 0.020 | 0.023 |
| b2                                             | 4.80        | 4.90 | 5.00  | 0.189     | 0.193 | 0.197 |
| b3                                             | 0.094       |      |       | 0.004     |       |       |
| b4                                             | 0.47        |      |       | 0.019     |       |       |
| c                                              | 0.20        | 0.25 | 0.30  | 0.008     | 0.010 | 0.012 |
| D                                              | 5.00        | 5.13 | 5.25  | 0.197     | 0.202 | 0.207 |
| D1                                             | 4.80        | 4.90 | 5.00  | 0.189     | 0.193 | 0.197 |
| D2                                             | 3.86        | 3.96 | 4.06  | 0.152     | 0.156 | 0.160 |
| D3                                             | 1.63        | 1.73 | 1.83  | 0.064     | 0.068 | 0.072 |
| e                                              | 1.27 BSC    |      |       | 0.050 BSC |       |       |
| E                                              | 6.05        | 6.15 | 6.25  | 0.238     | 0.242 | 0.246 |
| E1                                             | 4.27        | 4.37 | 4.47  | 0.168     | 0.172 | 0.176 |
| E2                                             | 2.75        | 2.85 | 2.95  | 0.108     | 0.112 | 0.116 |
| E3                                             | 6.05        | 6.22 | 6.40  | 0.238     | 0.245 | 0.252 |
| F                                              | -           | -    | 0.15  | -         | -     | 0.006 |
| L                                              | 0.62        | 0.72 | 0.82  | 0.024     | 0.028 | 0.032 |
| L1                                             | 0.92        | 1.07 | 1.22  | 0.036     | 0.042 | 0.048 |
| K                                              | 0.51        |      |       | 0.020     |       |       |
| W                                              | 0.23        |      |       | 0.009     |       |       |
| W1                                             | 0.41        |      |       | 0.016     |       |       |
| W2                                             | 2.82        |      |       | 0.111     |       |       |
| W3                                             | 2.96        |      |       | 0.117     |       |       |
| θ                                              | 0°          | -    | 10°   | 0°        | -     | 10°   |
| ECN: C23-1026-Rev. D, 25-Sep-2023<br>DWG: 6044 |             |      |       |           |       |       |

**Note**

- Millimeters will govern

### RECOMMENDED MINIMUM PAD FOR PowerPAK® SO-8L SINGLE



Recommended Minimum Pads  
Dimensions in mm (inches)



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| Vishay Material Code | Customer Material  | Location |
|----------------------|--------------------|----------|
| SQJ850EP-T1_GE3      | SLNSQJ850EP-T1-GE3 | Ft Worth |