

## JMTG035N04L

### Features

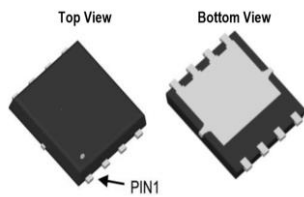
- Excellent  $R_{DS(ON)}$  and Low Gate Charge
- 100% UIS Tested
- 100%  $V_{DS}$  Tested
- Halogen-free; RoHS-compliant

### Applications

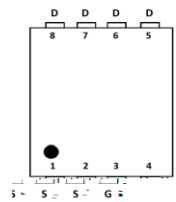
- Load Switch
- PWM Application
- Power Management

### Product Summary

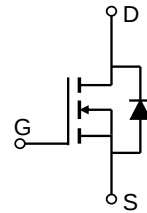
| Parameters                      | Value | Unit       |
|---------------------------------|-------|------------|
| $V_{DSS}$                       | 40    | V          |
| $V_{GS(th\_Typ)}$               | 1.5   | V          |
| $I_D(@V_{GS}=10V)$              | 100   | A          |
| $R_{DS(ON\_Typ)}(@V_{GS}=10V)$  | 2.4   | m $\Omega$ |
| $R_{DS(ON\_Typ)}(@V_{GS}=4.5V)$ | 3.0   | m $\Omega$ |



PDFN5X6-8L



Pin Assignment



Schematic Diagram

### Ordering Information

| Device      | Marking  | MSL | Form      | Package    | Reel(pcs) | Per Carton (pcs) |
|-------------|----------|-----|-----------|------------|-----------|------------------|
| JMTG035N04L | G035N04L | 1   | Tape&Reel | PDFN5x6-8L | 5000      | 50000            |

### Absolute Maximum Ratings (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)

| Symbol         | Parameter                                     | Value                                                 | Unit             |
|----------------|-----------------------------------------------|-------------------------------------------------------|------------------|
| $V_{DS}$       | Drain-to-Source Voltage                       | 40                                                    | V                |
| $V_{GS}$       | Gate-to-Source Voltage                        | $\pm 20$                                              | V                |
| $I_D$          | Continuous Drain Current                      | $T_C = 25^\circ\text{C}$<br>$T_C = 100^\circ\text{C}$ | A                |
| $I_{DM}$       | Pulsed Drain Current <sup>(1)</sup>           | Refer to Fig.4                                        | A                |
| $E_{AS}$       | Single Pulsed Avalanche Energy <sup>(2)</sup> | 306                                                   | mJ               |
| $P_D$          | Power Dissipation                             | $T_C = 25^\circ\text{C}$<br>$T_C = 100^\circ\text{C}$ | W                |
| $T_J, T_{STG}$ | Junction & Storage Temperature Range          | -55 to 150                                            | $^\circ\text{C}$ |

### Thermal Characteristics

| Symbol | Parameter                                              | Max | Unit               |
|--------|--------------------------------------------------------|-----|--------------------|
| R      | Thermal Resistance, Junction to Ambient <sup>(3)</sup> | 37  | $^\circ\text{C/W}$ |
| R      | Thermal Resistance, Junction to Case                   | 1.0 | $^\circ\text{C/W}$ |

**Electrical Characteristics** (T<sub>J</sub> = 25°C unless otherwise specified)

| Symbol               | Min. | Typ. | Max. | Unit |
|----------------------|------|------|------|------|
| Off Characteristics  |      |      |      |      |
| V <sub>(BR)DSS</sub> | 40   | -    | -    | V    |
| I <sub>DSS</sub>     | -    | -    | 1.0  | μA   |
| I <sub>GSS</sub>     | -    | -    | ±100 | nA   |
| V                    |      |      |      |      |

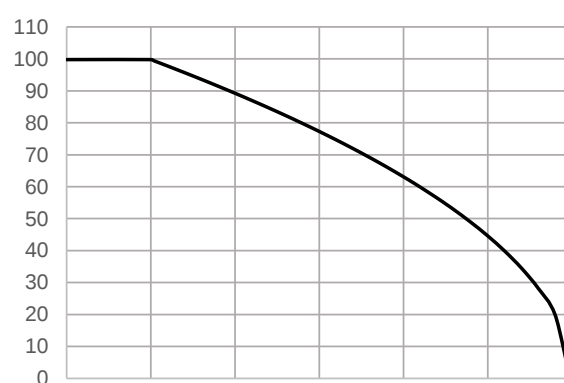
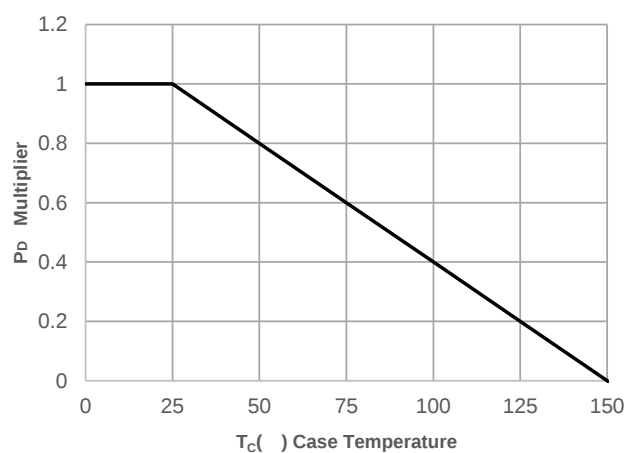
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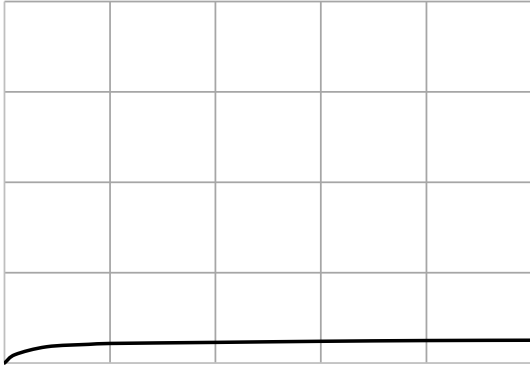
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## Typical Performance Characteristics

Figure 1: Power De-rating

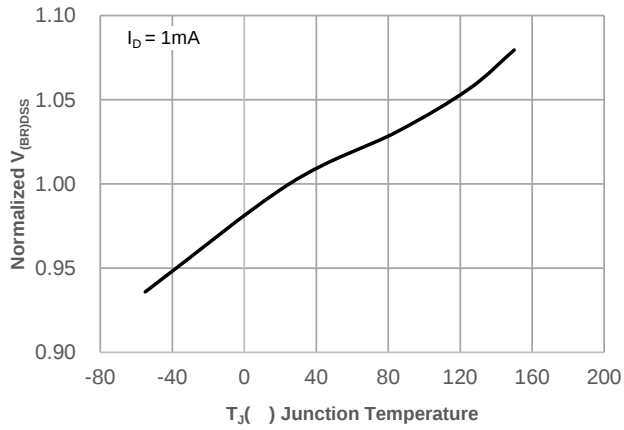


## Typical Performance Characteristics

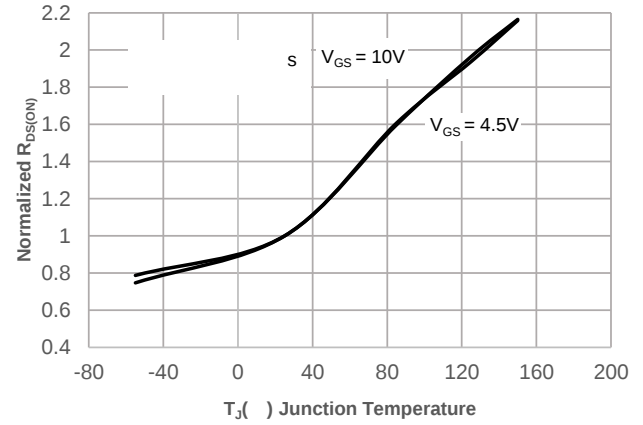


## Typical Performance Characteristics

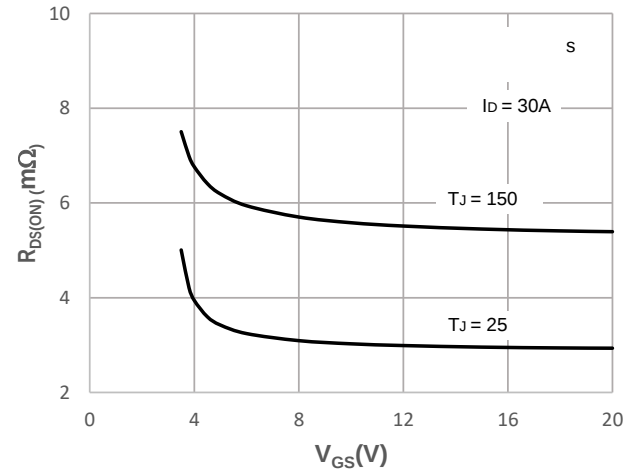
**Figure 11: Normalized Breakdown voltage vs. Junction Temperature**



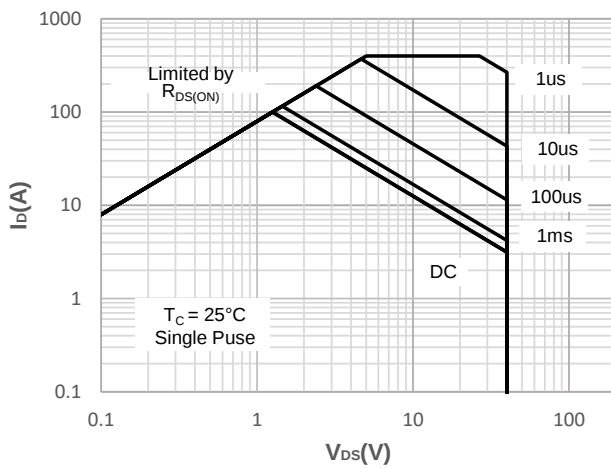
**Figure 12: Normalized on Resistance vs. Junction Temperature**



**Figure 14:  $R_{DS(ON)}$  vs.  $V_{GS}$**



**Figure 15: Maximum Safe Operating Area**



## Test Circuit

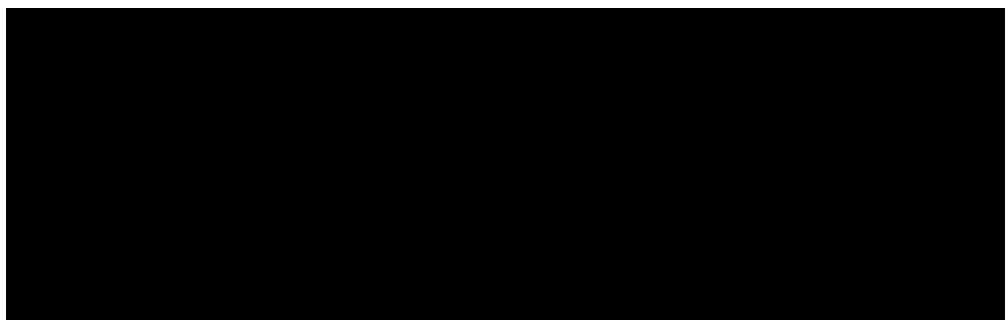


Figure 1: Gate Charge Test Circuit & Waveform

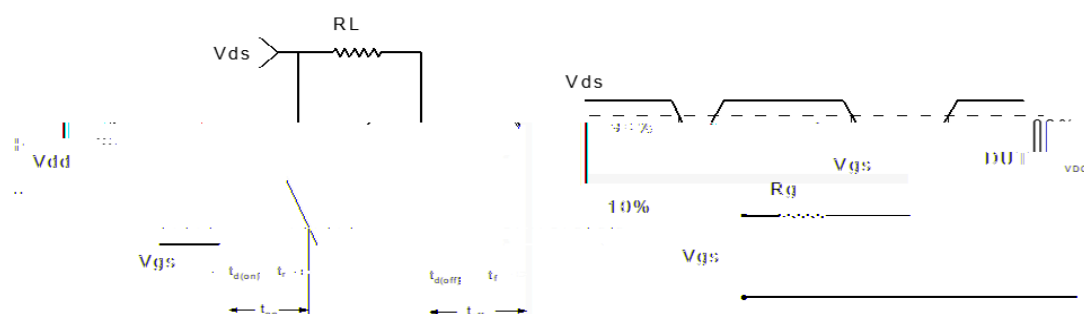
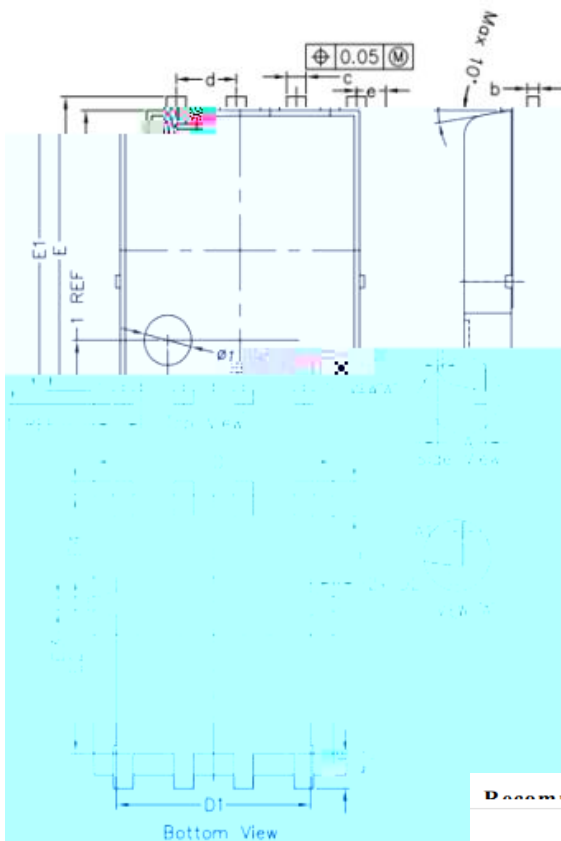


Figure 2: Resistive Switching Test Circuit & Waveform

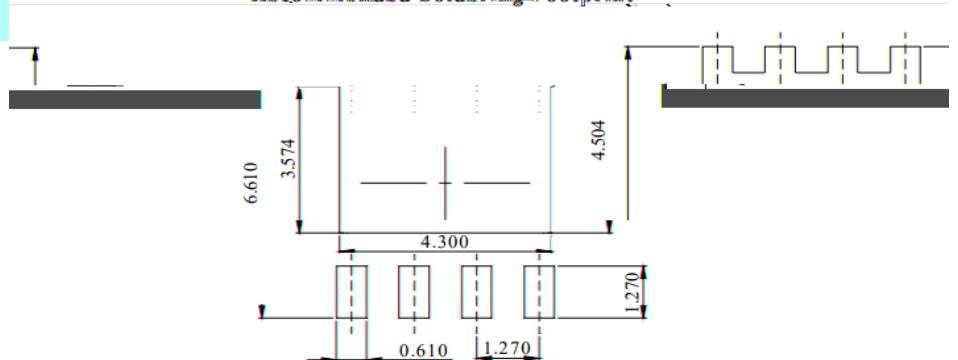
# Package Mechanical Data(PDFN 5X6-8L)



| SYMBOLS | DIMENSION IN MM |       |       | DIMENSION IN INCHES |       |       |
|---------|-----------------|-------|-------|---------------------|-------|-------|
|         | MIN             | NOM   | MAX   | MIN                 | NOM   | MAX   |
| * A     | 0.900           | 1.000 | 1.100 | 0.035               | 0.039 | 0.043 |
| A1      | 0.000           | ---   | 0.050 | 0.000               | ----  | 0.002 |
| b       | 0.246           | 0.254 | 0.312 | 0.010               | 0.010 | 0.012 |
| * c     | 0.310           | 0.410 | 0.510 | 0.012               | 0.016 | 0.020 |
| d       | 1.27 BSC        |       |       | 0.050 BSC           |       |       |

|      |       |           |       |       |           |       |
|------|-------|-----------|-------|-------|-----------|-------|
| * D1 | 4.000 | 4.050     | 4.150 | 0.157 | 0.160     | 0.165 |
| D1   | 4.000 | 4.100     | 4.200 | 0.157 | 0.161     | 0.165 |
| * D2 | ---   | ---       | 0.125 | ---   | ---       | 0.005 |
| D2   | ---   | 0.062 BSC | ---   | ---   | 0.024 BSC | ---   |
| * E1 | 5.500 | 5.600     | 5.700 | 0.217 | 0.220     | 0.224 |
| * E1 | 6.000 | 6.150     | 6.250 | 0.236 | 0.242     | 0.246 |
| E2   | 3.425 | 3.525     | 3.625 | 0.135 | 0.139     | 0.143 |
| E3   | 0.150 | 0.250     | 0.350 | 0.006 | 0.010     | 0.014 |
| * E4 | 0.175 | 0.275     | 0.375 | 0.007 | 0.011     | 0.015 |
| E5   | ---   | ---       | 0.100 | ---   | ---       | 0.004 |
| * F1 | 0.500 | 0.600     | 0.700 | 0.02  | 0.02      | 0.03  |
| F2   | 0.675 | 0.700     | 0.800 | 0.02  | 0.03      | 0.03  |

## Recommended Soldering Footprint



DIMENSIONS:MILLIMETERS

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