

Features

- Low gate charge
- 100% avalanche tested
- Improved dv/dt capability
- RoHS compliant
- Halogen free package
- JEDEC Qualification

$$V_{DSS} = 715 \text{ V @ } T_{jmax}$$

$$I_D = 5.5 \text{ A}$$

$$R_{DS(on)} = 1.6 \text{ } \Omega \text{ (max) @ } V_{GS} = 10 \text{ V}$$



| Device | Package | Marking | Remark |
|-------------------|-------------|-------------------|--------------|
| TMD6N65/TMU6N65 | D-PAK/I-PAK | TMD6N65/TMU6N65 | RoHS |
| TMD6N65G/TMU6N65G | D-PAK/I-PAK | TMD6N65G/TMU6N65G | Halogen Free |

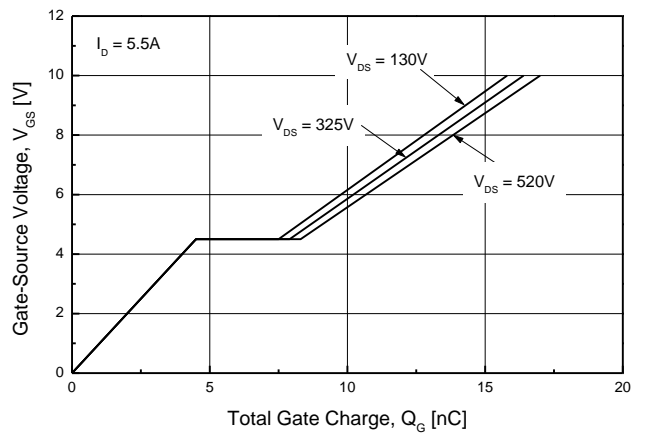
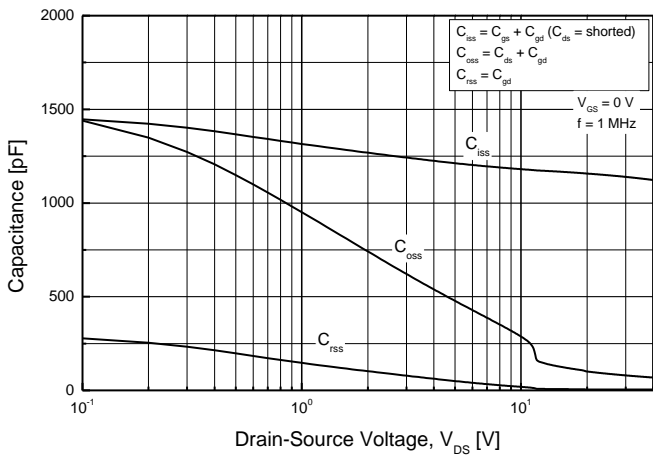
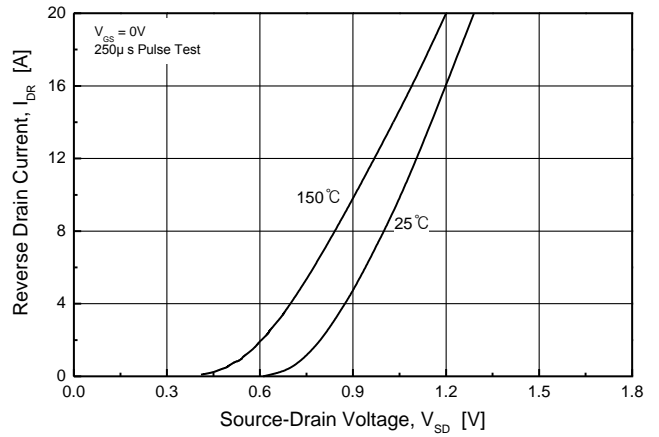
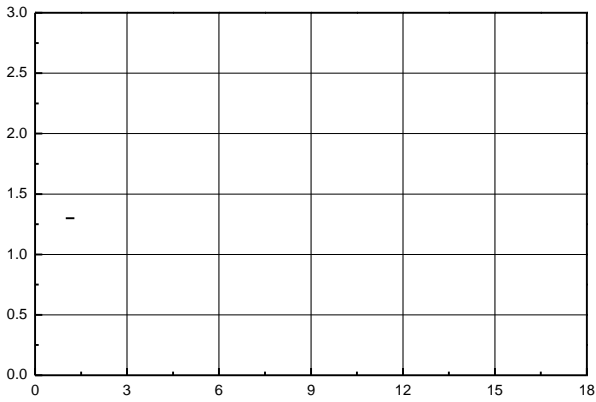
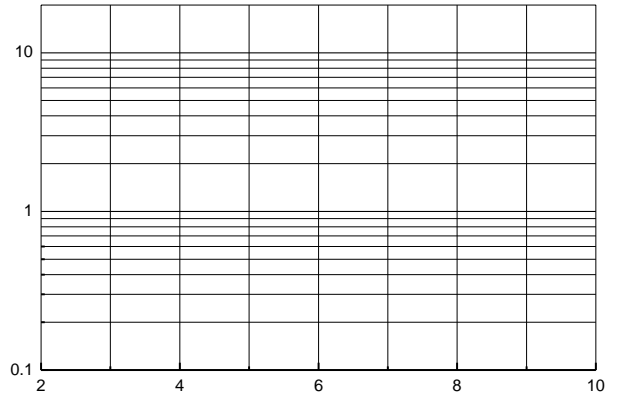
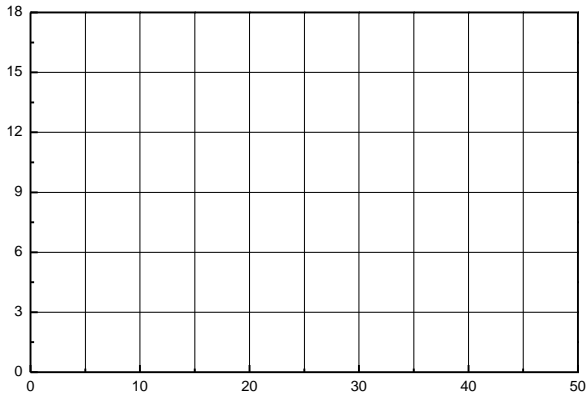
Absolute Maximum Ratings

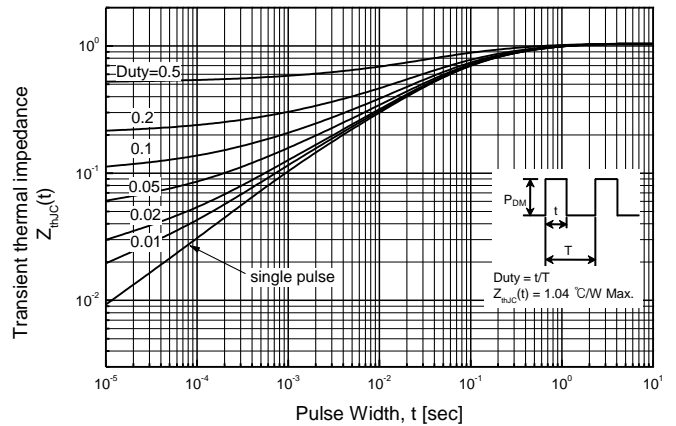
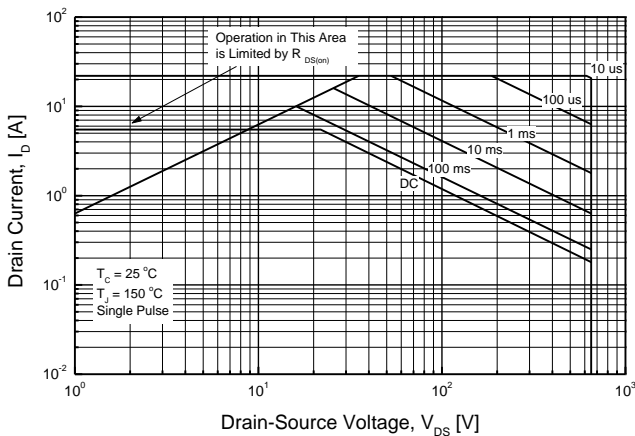
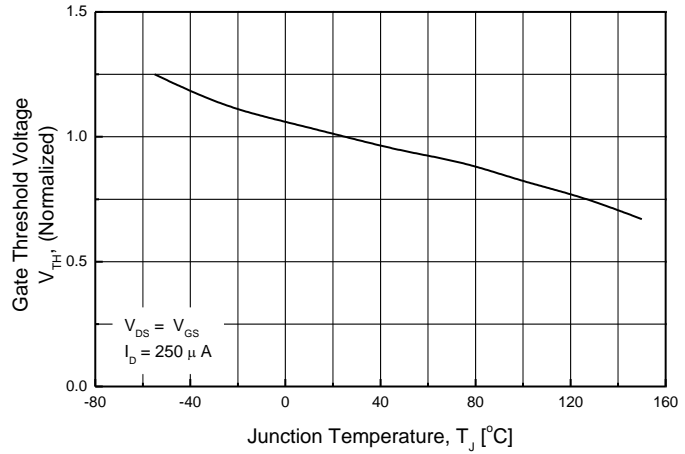
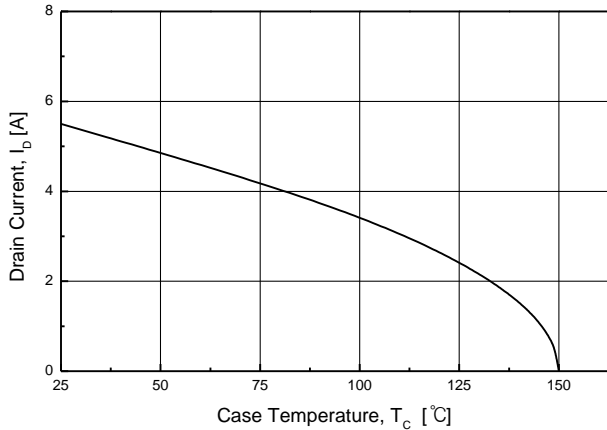
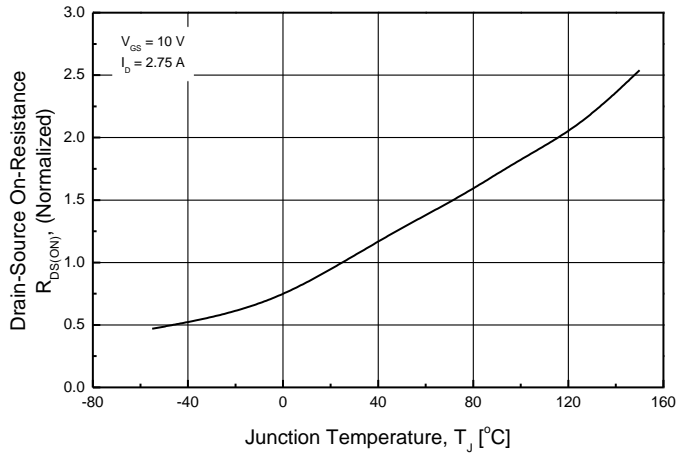
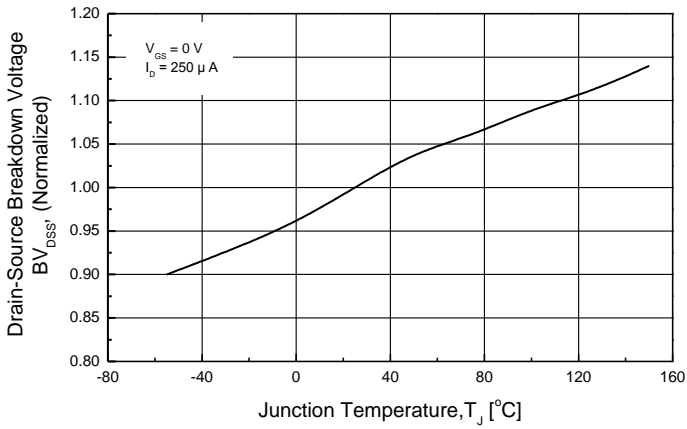
| Parameter | Symbol | TMD6N65(G)/TMU6N65(G) | Unit |
|---|----------------|--|------------------|
| Drain-Source Voltage | V_{DSS} | 650 | V |
| Gate-Source Voltage | V_{GS} | ± 30 | V |
| Continuous Drain Current | I_D | $T_C = 25 \text{ }^\circ\text{C}$ | 5.5 |
| | | $T_C = 100 \text{ }^\circ\text{C}$ | 3.46 |
| Pulsed Drain Current (Note 1) | I_{DM} | 22 | A |
| Single Pulse Avalanche Energy (Note 2) | E_{AS} | 196.6 | mJ |
| Repetitive Avalanche Current (Note 1) | I_{AR} | 5.5 | A |
| Repetitive Avalanche Energy (Note 1) | E_{AR} | 12 | mJ |
| Power Dissipation | P_D | $T_C = 25 \text{ }^\circ\text{C}$ | 120 |
| | | Derate above $25 \text{ }^\circ\text{C}$ | 0.96 |
| Peak Diode Recovery dv/dt (Note 3) | dv/dt | 4.5 | V/ns |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55~150 | $^\circ\text{C}$ |
| Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds | T_L | 300 | $^\circ\text{C}$ |

* Limited only by maximum junction temperature

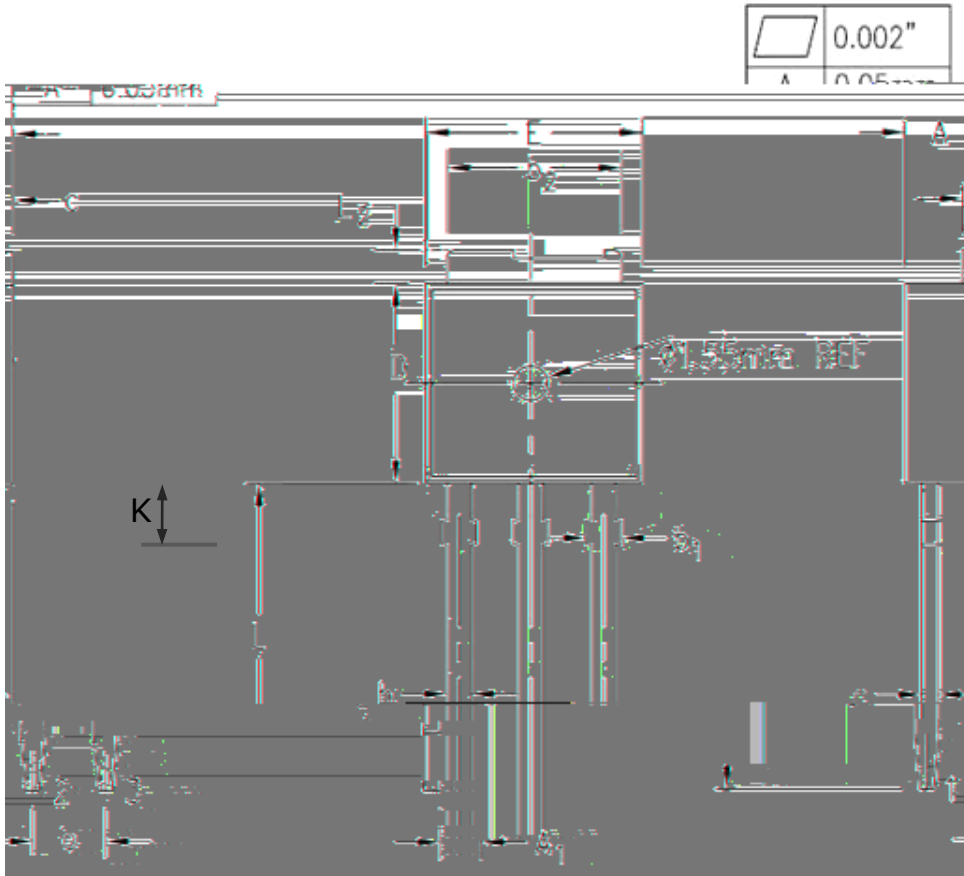
Thermal Characteristics

| Parameter | Symbol | TMD6N65(G)/TMU6N65(G) | Unit |
|---|-----------------|-----------------------|--------------------|
| Maximum Thermal resistance, Junction-to-Case | $R_{\theta JC}$ | 1.04 | $^\circ\text{C/W}$ |
| Maximum Thermal resistance, Junction-to-Ambient | $R_{\theta JA}$ | 110 | $^\circ\text{C/W}$ |





TO-251 (I-PAK) MECHANICAL DATA



| SYMBOL | INCHES | | MILIMETERS | | NOTES |
|--------|------------|-------|------------|------|-------|
| | MIN. | MAX. | MIN. | MAX. | |
| A | 0.086 | 0.094 | 2.19 | 2.39 | |
| A1 | 0.040 | 0.045 | 1.02 | 1.14 | |
| b | 0.025 | 0.035 | 0.64 | 0.89 | |
| b1 | 0.037 | 0.045 | 0.95 | 1.14 | |
| b2 | 0.205 | 0.215 | 5.21 | 5.46 | |
| c | 0.018 | 0.023 | 0.46 | 0.58 | |
| D | 0.235 | 0.245 | 5.97 | 6.22 | |
| E | 0.250 | 0.265 | 6.35 | 6.73 | |
| e | 0.090 TYP. | | 2.28 TYP. | | |
| L | 0.350 | 0.380 | 8.89 | 9.65 | |
| L2 | 0.035 | 0.050 | 0.89 | 1.27 | |
| K | 0.079 | 0.096 | 2.00 | 2.44 | |