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### Features

- Typ. $R_{DS(on)}$ = 40 mΩ
- Ultra Low Gate Charge (Typ. $Q_{G(tot)}$ = 106 nC)
- Low Effective Output Capacitance (Typ. $C_{oss}$ = 139 pF)
- 100% Avalanche Tested
- $T_J$ = 175°C
- This Device is Halide Free and RoHS Compliant with exemption 7a, Pb−Free 2LI (on second level interconnection)

### Typical Applications

- UPS
- DC-DC Converter
- Boost Inverter

**MAXIMUM RATINGDaRcMC0 70t00onvertX29921260.7181 414.5386 Tc Tm6.)=175**

| | | | | | |
|---|---|---|---|---|---|
| | | | $V_{GS}$ | 25/ −15 | V |
| Recommended Operation Values of Gate−Source Voltage | | $T_C$ < 175°C | $V_{GSop}$ | +20/−5 | V |
| Continuous Drain Current (Note 1) | Steady State | $T_C$ = 25°C | $I_D$ | 60 | A |
| Power Dissipation (Note 1) | | | $P_D$ | 357 | W |
| Continuous Drain Current (Note 1) | | | | | |

| | | | |
|---|---|---|---|
| Single Pulse Drain−to−Source Avalanche Energy ($I_L$ = 34 $A_{pk}$, L = 1 mH) (Note 3) | $E_{AS}$ | 578 | mJ |
| Maximum Lead Temperature for Soldering, 1/8″ from Case for 10 Seconds | $T_L$ | 300 | °C |

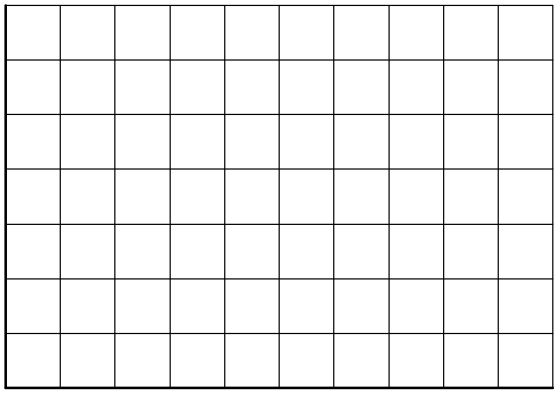
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

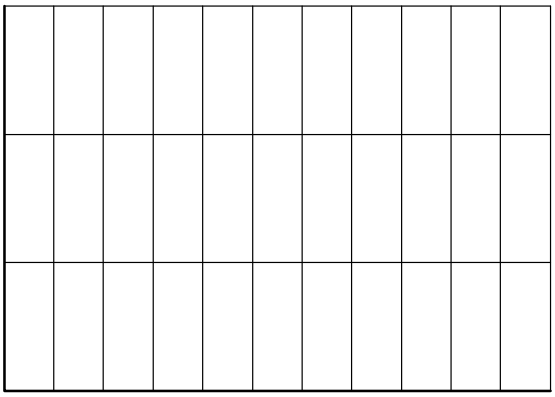
1. The entire application environment impacts the thermal resistance values shown, they are not constants and are only valid for the particular conditions noted.
2. Repetitive rating, limited by max junction temperature.
3. $E_{AS}$ of 578 mJ is based on starting $T_J$ = 25°C; L = 1 mH, $I_{AS}$ = 34 A, $V_{DD}$ = 120 V, $V_{GS}$ = 18 V.

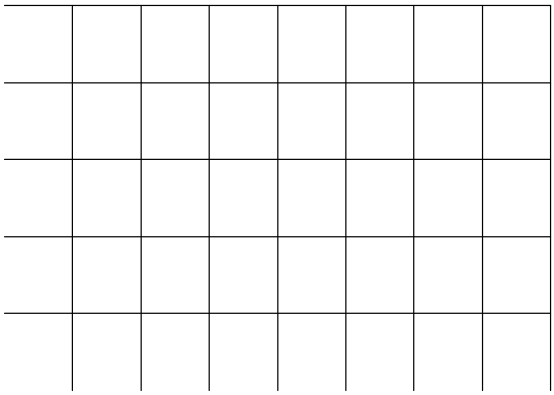
**Table 1. THERMAL CHARACTERISTICS**

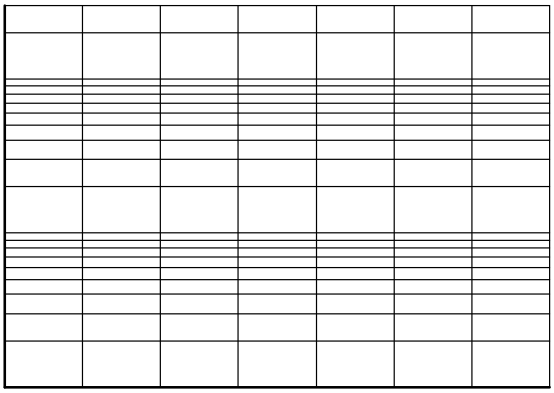
| Parameter | Symbol | Max | Unit |
|---|---|---|---|
| Thermal Resistance Junction−to−Case (Note 1) | $R_{\theta JC}$ | 0.42 | °C/W |
| Thermal Resistance Junction−to−Ambient (Note 1) | R | | |

## TYPICAL CHARACTERISTICS

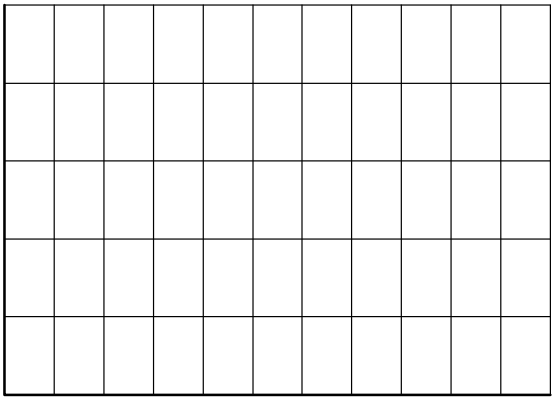


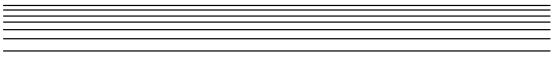


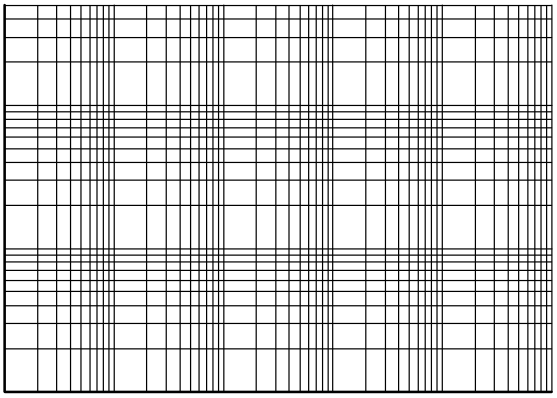


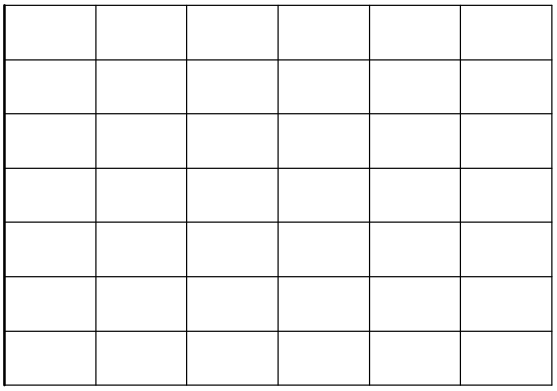


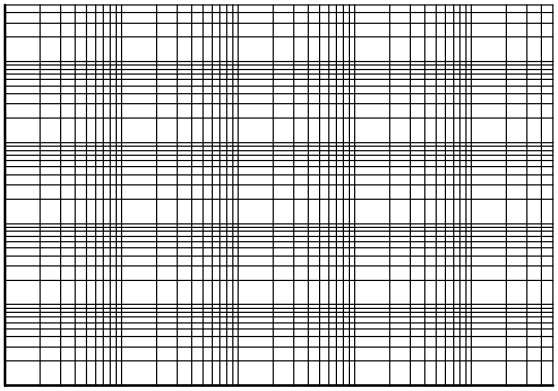
## TYPICAL CHARACTERISTICS (continued)

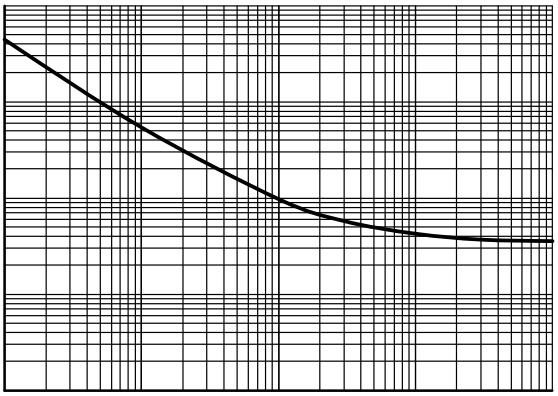












## TYPICAL CHARACTERISTICS (continued)

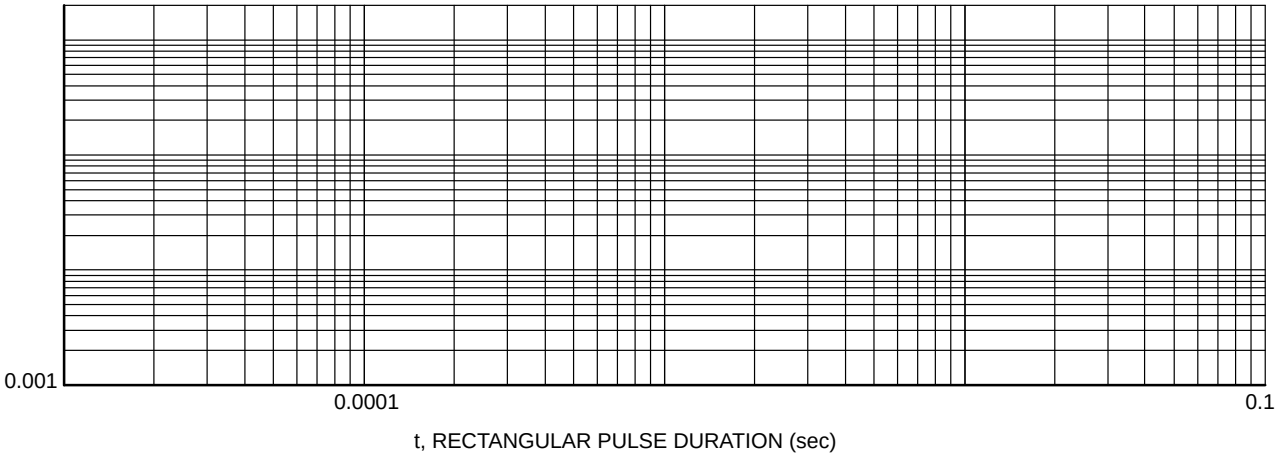
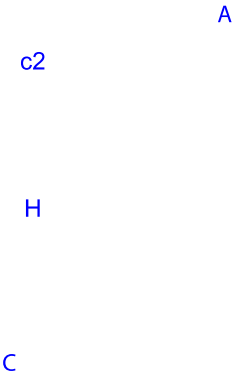



**Figure 13. Junction−to−Ambient Transient Thermal Response Curve**

**D$^2$PAK7 (TO−263−7L HV)**
CASE 418BJ
ISSUE B

DATE 16 AUG 2019




**GENERIC**
**MARKING DIAGRAM***


XXXX = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
G = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.