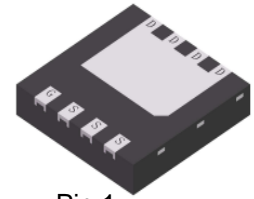


LNB8407DT0AG

40V N-Channel Power MOSFET



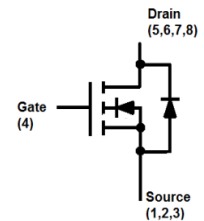
Pin 1
DFN3333-8A

1. FEATURES

- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Power Tools
- DC/DC conversion
- Motor Control



3. DEVICE MARKING AND RESISTOR VALUES

| Device | Marking | Shipping |
|--------------|---------|----------------|
| LNB8407DT0AG | NA07 | 2000/Tape&Reel |

4. MAXIMUM RATINGS

| Parameter | | Symbol | Limits | Unit |
|--|-----------|-----------|----------|------|
| Drain-to-Source Voltage | | VDS | 40 | V |
| Gate-to-Source Voltage | | VGS | ± 20 | V |
| Continuous Drain Current(Note 1) | TA =25°C | ID | 14 | A |
| | TA =100°C | | 9 | |
| Pulsed Drain Current | TA =25°C | IDM | 56 | |
| Continuous Drain Current | TC =25°C | ID | 58 | A |
| | TC =100°C | | 37 | |
| Pulsed Drain Current(Note 2) | TC =25°C | IDM | 232 | |
| Avalanche Current | | IAS | 19.8 | A |
| Avalanche energy(L=0.1mH) | | EAS | 19.6 | mJ |
| Power Dissipation (Note 1) | TA =25°C | PD | 2.2 | W |
| | TA =100°C | | 0.86 | |
| | TC =25°C | | 41 | |
| | TC =100°C | | 16 | |
| Operating Junction and Storage Temperature Range | | TJ , TSTG | -55~+150 | °C |

5. THERMAL CHARACTERISTICS

| Parameter | Symbol | Max | Unit |
|-----------------------------|--------|-----|------|
| Junction-to-Ambient(Note 1) | RθJA | 58 | °C/W |
| Junction-to-Case | RθJC | 3 | |

Note 1.Surface mounted on 1.5 x 1.5 FR4 board using 1 sq in pad, 2 oz Cu.

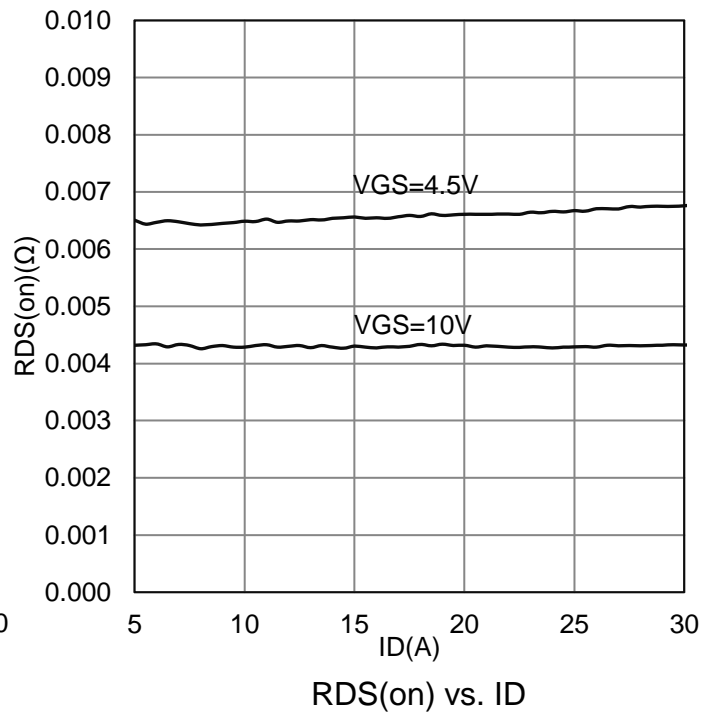
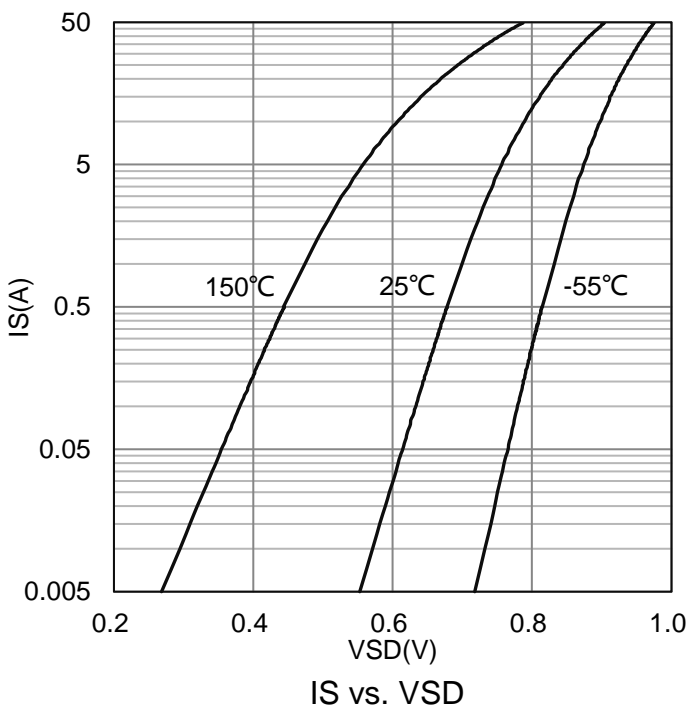
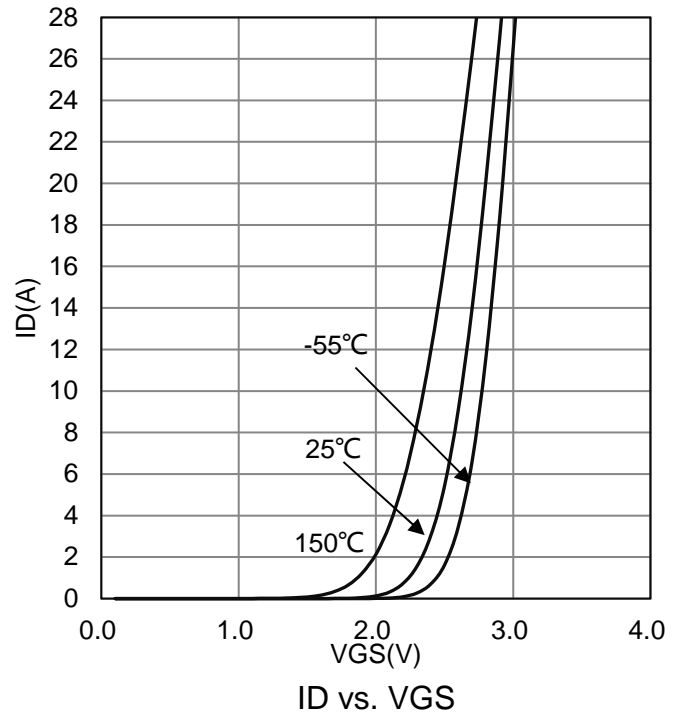
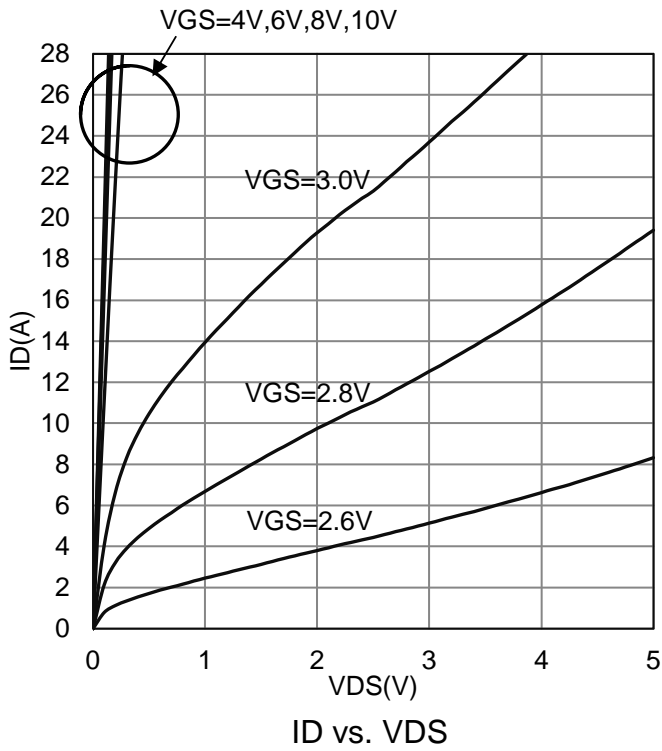
2.Pulse width limited by maximum junction temperature.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

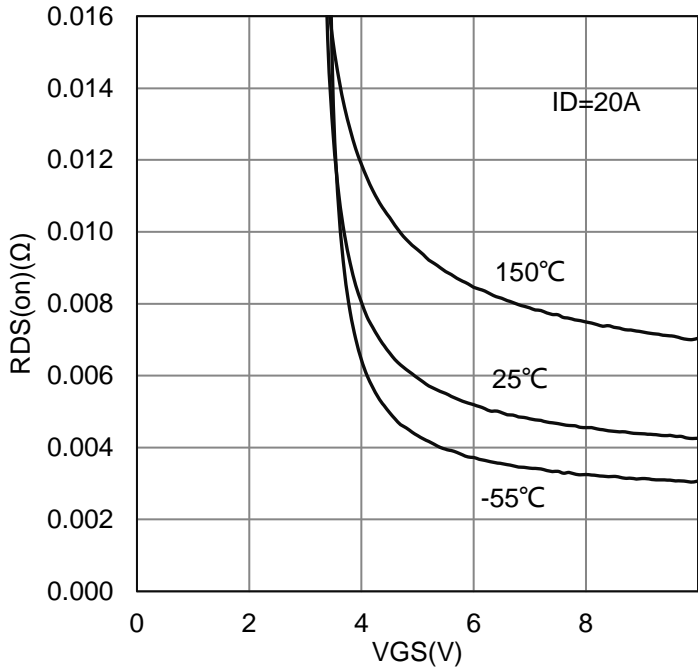
| Characteristic | Symbol | Min. | Typ. | Max. | Unit | |
|---|---|---------|------------|------------|------|----|
| Static | | | | | | |
| Drain to Source Breakdown Voltage (VGS = 0 V, ID = 250 μA) | BVDSS | 40 | - | - | V | |
| Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μA) | VGS(th) | 1 | - | 2.5 | V | |
| Gate-Body Leakage (VDS = 0 V, VGS = ±20 V) | IGSS | - | - | ±100 | nA | |
| Zero Gate Voltage Drain Current (VDS = 40 V, VGS = 0 V) | IDSS | - | - | 1 | μA | |
| Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 20 A) (VGS = 4.5 V, ID = 12 A) | RDS(on) | - | 4.1 6.3 | 4.9 8.1 | mΩ | |
| Diode Forward Voltage (IS = 20 A, VGS = 0 V) | VSD | - | 0.8 | 1.3 | V | |
| Dynamic | | | | | | |
| Input Capacitance | (VDS = 20 V, VGS = 0 V, f = 1MHz) | Ciss | - | 935 | - | pF |
| Output Capacitance | | Coss | - | 364 | - | |
| Reverse Transfer Capacitance | | Crss | - | 37 | - | |
| Total Gate Charge | (VDS = 20 V, VGS = 10 V, ID = 20 A) | Qg | - | 19.2 | - | nC |
| Gate-Source Charge | | Qgs | - | 2.3 | - | |
| Gate-Drain Charge | | Qgd | - | 6 | - | |
| Turn-On Delay Time | (VDS = 20 V, ID = 20 A, VGS = 10 V, RG = 6 Ω) | td(on) | - | 8.2 | - | ns |
| Rise Time | | tr | - | 12 | - | |
| Turn-Off Delay Time | | td(off) | - | 35 | - | |
| Fall Time | | tf | - | 17 | - | |

3.Pulse test: PW ≤ 300μs duty cycle ≤ 2%.

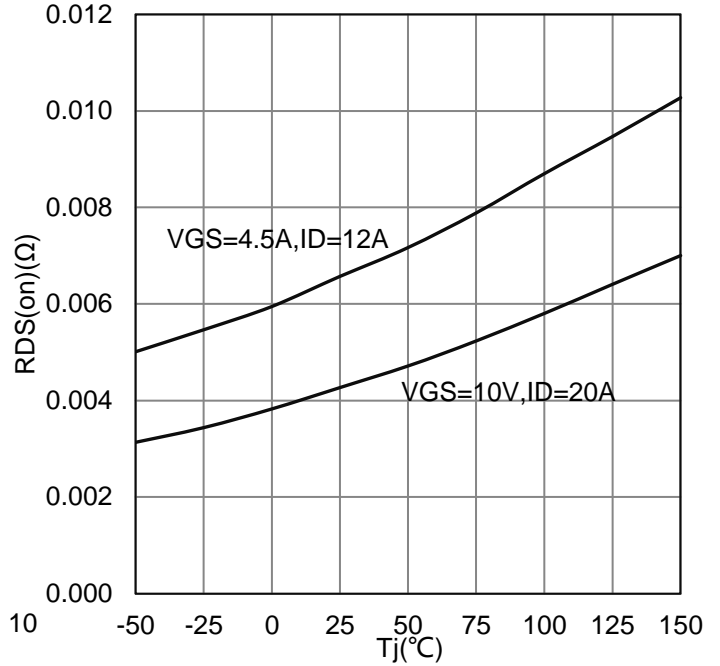
7. ELECTRICAL CHARACTERISTICS CURVES



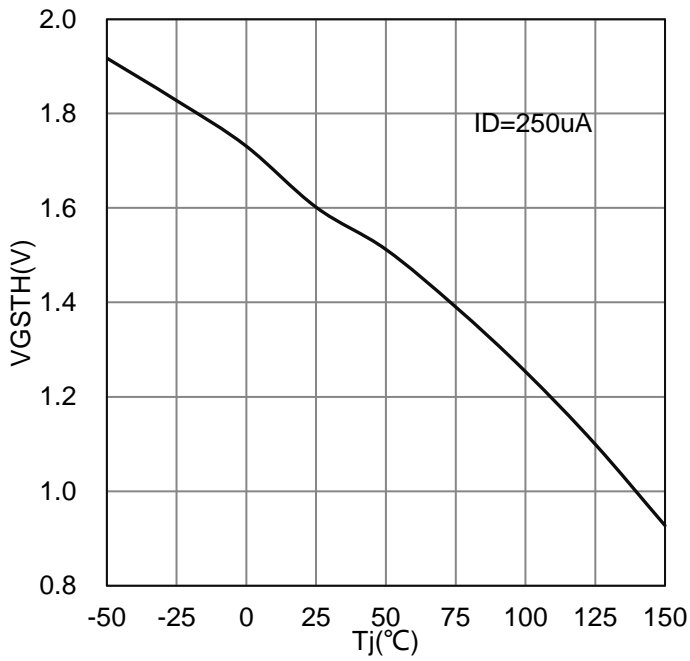
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



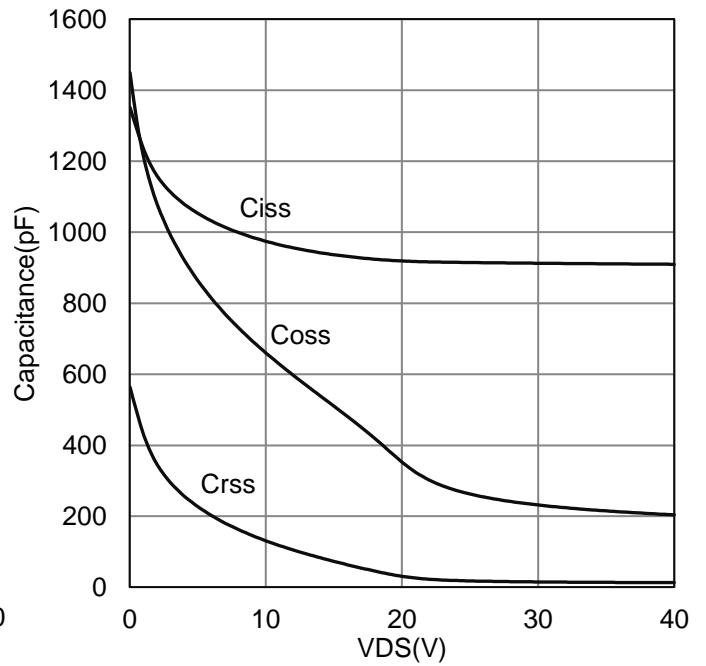
RDS(on) vs. VGS



RDS(on) vs. Tj

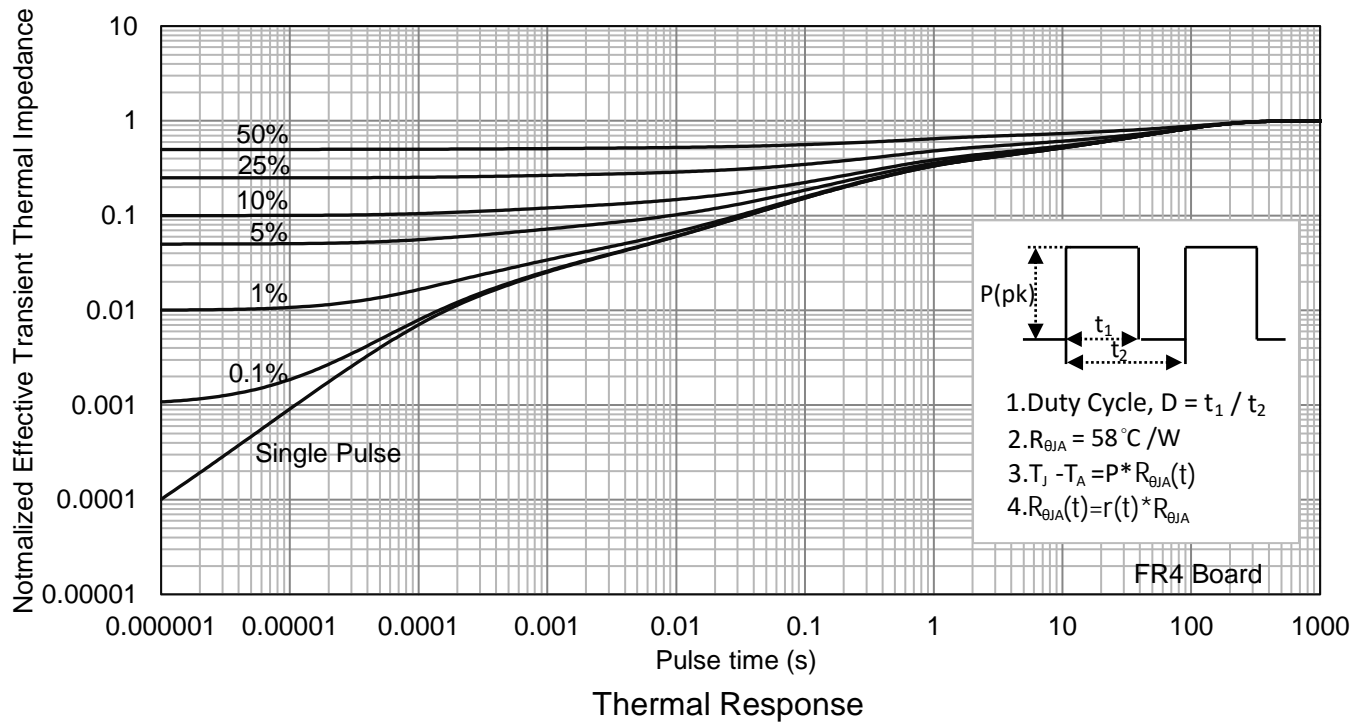
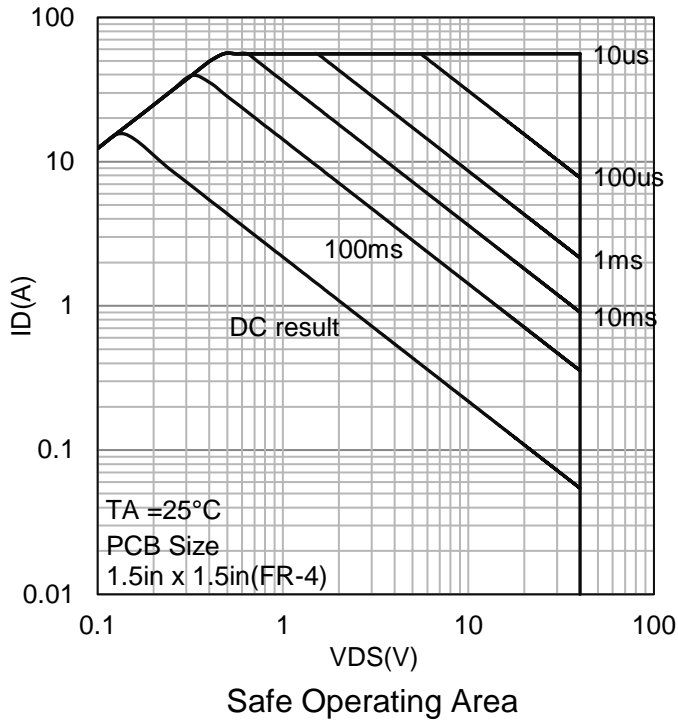


VGStH vs. Tj



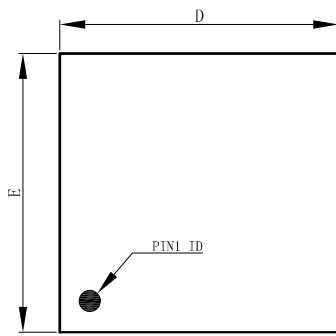
Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

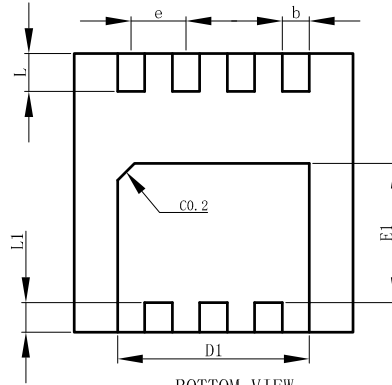


8. OUTLINE AND DIMENSIONS

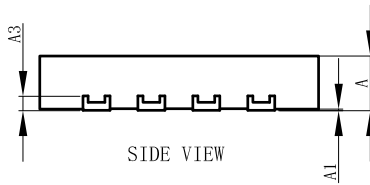
DFN3333-8A



TOP VIEW



BOTTOM VIEW

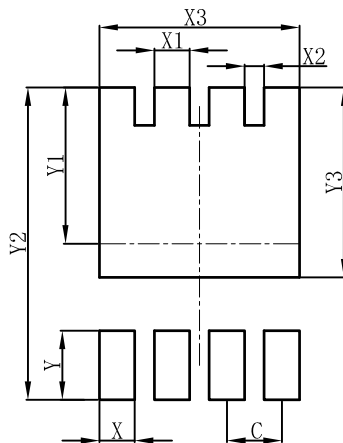


SIDE VIEW

| DFN3333-8A | | | |
|----------------------|-----------|------|------|
| DIM | MIN | NOR | MAX |
| A | 0.60 | 0.65 | 0.70 |
| A1 | 0.00 | 0.03 | 0.05 |
| b | 0.27 | 0.32 | 0.37 |
| D | 3.25 | 3.30 | 3.35 |
| E | 3.25 | 3.30 | 3.35 |
| D1 | 2.22 | 2.27 | 2.32 |
| E1 | 1.60 | 1.65 | 1.70 |
| e | 0.65BSC | | |
| L | 0.40 | 0.45 | 0.50 |
| L1 | 0.30 | 0.35 | 0.40 |
| A3 | 0.152REF. | | |
| All Dimensions in mm | | | |

9. SOLDERING FOOTPRINT

DFN3333-8A



| DFN3333-8A | |
|------------|------|
| DIM | (mm) |
| C | 0.65 |
| X | 0.42 |
| X1 | 0.42 |
| X2 | 0.23 |
| X3 | 2.37 |
| Y | 0.70 |
| Y1 | 1.85 |
| Y2 | 3.70 |
| Y3 | 2.25 |

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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