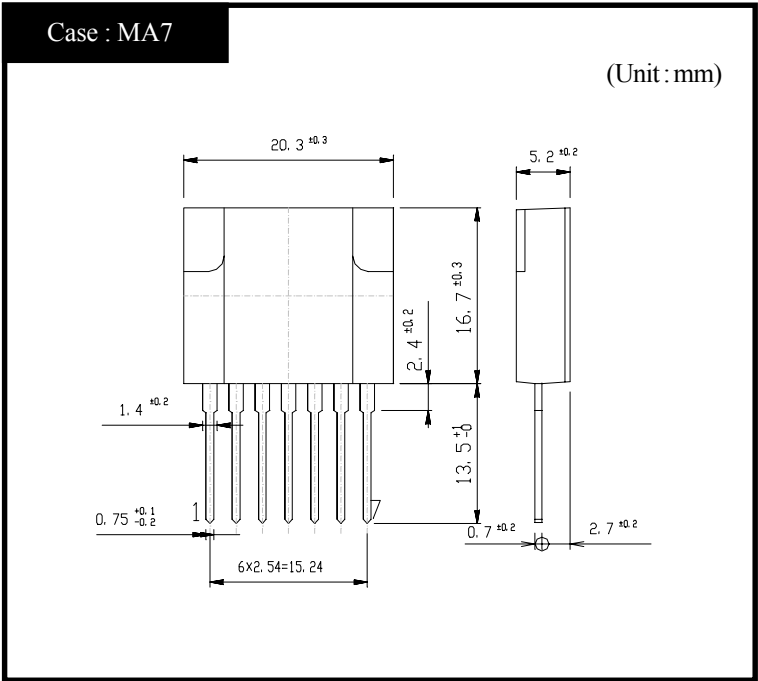


MA4520

OUTLINE DIMENSIONS



RATINGS

●Absolute Maximum Ratings

| Item                      | Symbol | Conditions                 | Ratings | Unit |
|---------------------------|--------|----------------------------|---------|------|
| Storage Temperature       | Tstg   |                            | -30~125 | °C   |
| Operating Temperature     | Top    |                            | -20~125 | °C   |
| Junction Temperature      | Tj     |                            | 150     | °C   |
| Peak Input Voltage        | Vin    | ②+,③-,⑤-                   | 500     | V    |
| Input Current             | Iin    | DC ②+,③-                   | 5       | A    |
|                           |        | Pulse ②+,③- Duty 1/2       | 8       | A    |
| Maximum Power Dissipation | PD     | Ta=25°C                    | 3       | W    |
|                           | PD     | Heatsink Tc=100°C          | 17      | W    |
| Dielectric Strength       | Vdis   | Terminals To Case AC 1 min | 2       | kV   |
| Insulation Resistance     |        | Terminals To Case 500VDC   | 100     | MΩ   |
| Max Voltage ④ to ⑥        | V④•⑥   | ④+,⑥-                      | 6       | V    |
| Max Current ⑥ to ④        | I⑥•④   | ⑥+,④- (Peak) Duty Max 1/2  | 200     | mA   |
| Reverse Current           | Iz     | ⑤+,④-                      | MAX 20  | mA   |

●Electrical Characteristics (Tc=25°C)

| Item | Symbol                                  | Conditions                                            | Ratings   | Unit |
|------|-----------------------------------------|-------------------------------------------------------|-----------|------|
| Q1   | Zero Gate Voltage DRAIN Current         | IDSS VDS=500V, VGS=0V, ②+,③-                          | MAX 250   | μA   |
|      | Static Drain-Source On-State Resistance | RD(on) ID=2.5A, ②+,③- VGS=10V, ⑤+,③- Junction to Case | TYP (1.1) | Ω    |
|      |                                         |                                                       | MAX 1.4   | Ω    |
|      |                                         |                                                       | MAX 2.9   | °C/W |
| D1   | Reverse Current                         | IR VR=500V, ①+,②-                                     | MAX 10    | μA   |
|      | Forward Voltage                         | VF IF=0.6A, ②+,①-                                     | MAX 1.7   | V    |
| Q2   | Fold Back Detection Voltage             | ③+,④-                                                 | TYP 0.7   | V    |

●Standard Operating Condition•Design Standard For Application Circuit

| Item                   | Conditions | Ratings  | Unit |
|------------------------|------------|----------|------|
| Input Rated Voltage    |            | AC90~132 | V    |
| Output Nominal Voltage |            | 12       | V    |
| Output Nominal Current |            | 4        | A    |

●Standard Operating Condition•Standard Operating Characteristics (Ta=25°C)

| Item                                    | Conditions                           | Ratings                                        | Unit |                |
|-----------------------------------------|--------------------------------------|------------------------------------------------|------|----------------|
| Minimum Input Full Load Output Voltage  | Vin=90V, IO=4.0A                     | 12.0±0.6                                       | V    | Fig 1, ① Refer |
| Maximum Input Light Load Output Voltage | Vin=132V, IO=0.40A                   | 12.0±0.6                                       | V    | Fig 1, ② Refer |
| Over Current Protection                 | Foldback Current<br>Vin=132V, VO=10V | MAX 6.0                                        | A    | Fig 1, ③ Refer |
|                                         | Short Circuit<br>Vin=132V, RO=0.5 Ω  | Nodamage To Any Device,<br>Automatic Recovery. | -    | Fig 1, ④ Refer |

Figure in ○=Terminal Sign

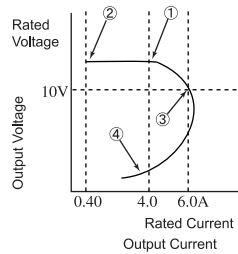
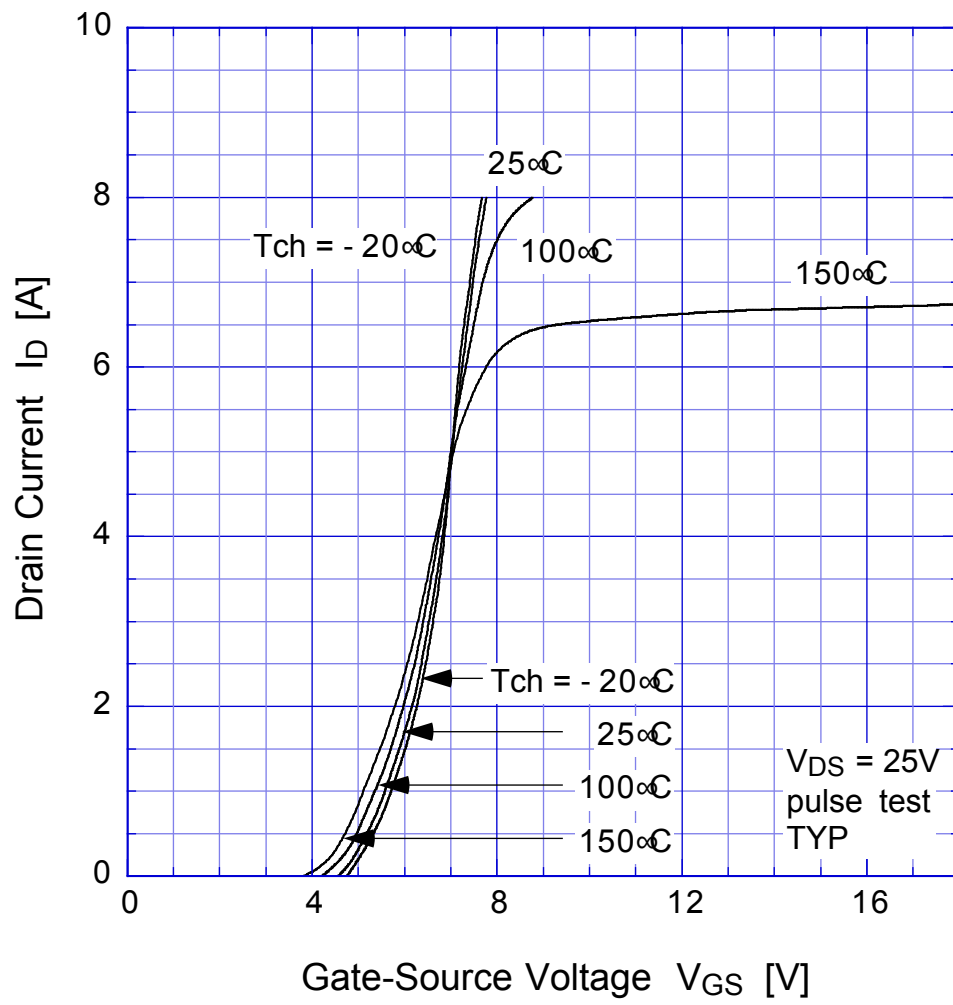


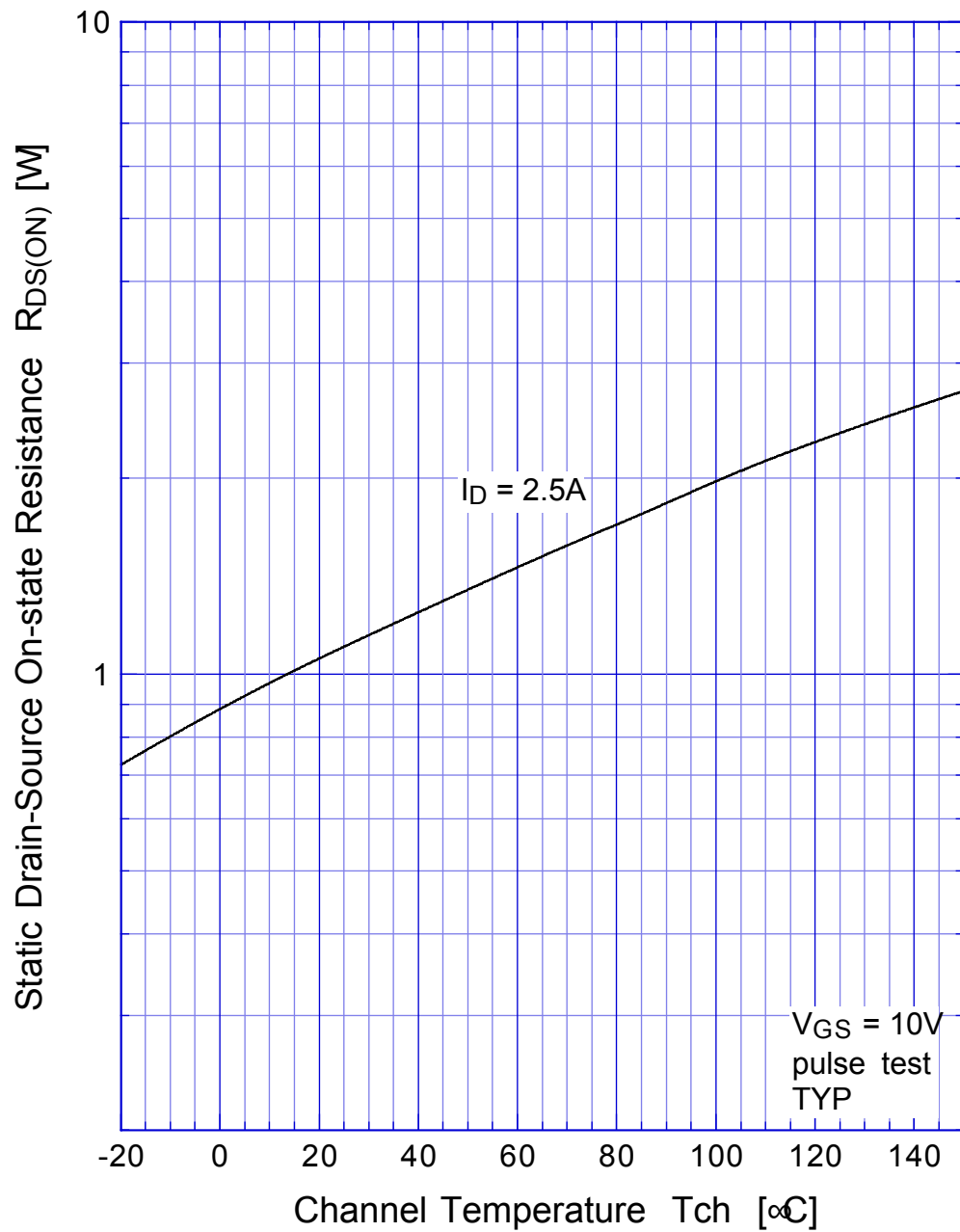
Fig1. Output Voltage/Current

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Transfer Characteristics

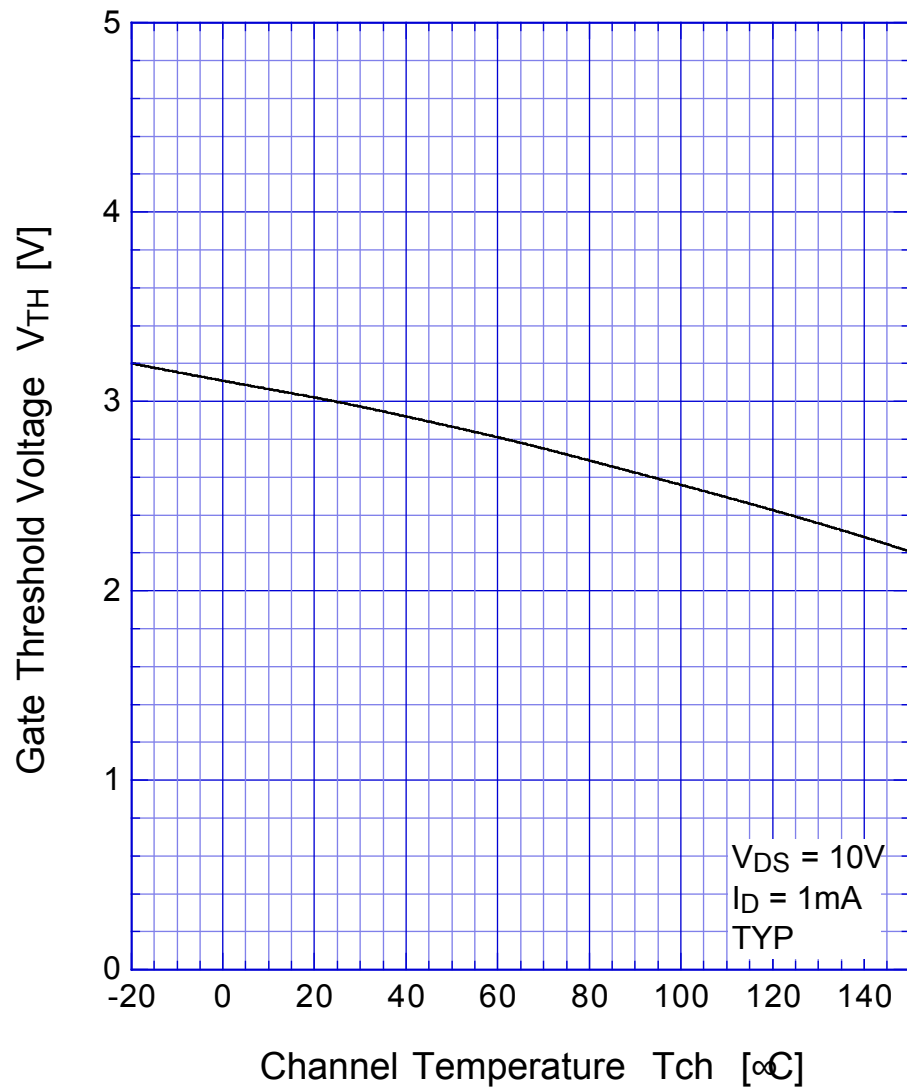


## MA4520 Static Drain-Source On-state Resistance



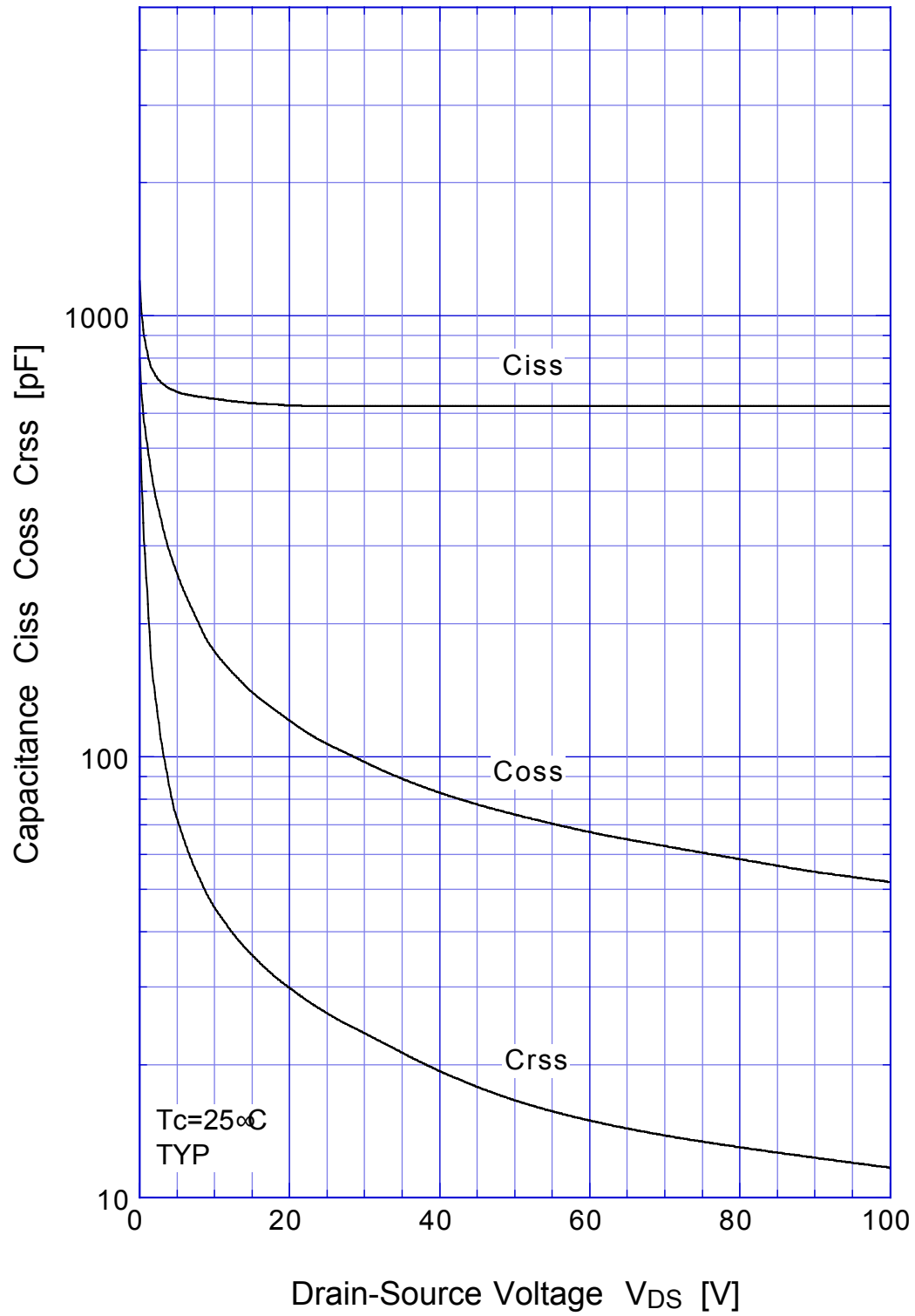
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Gate Threshold Voltage

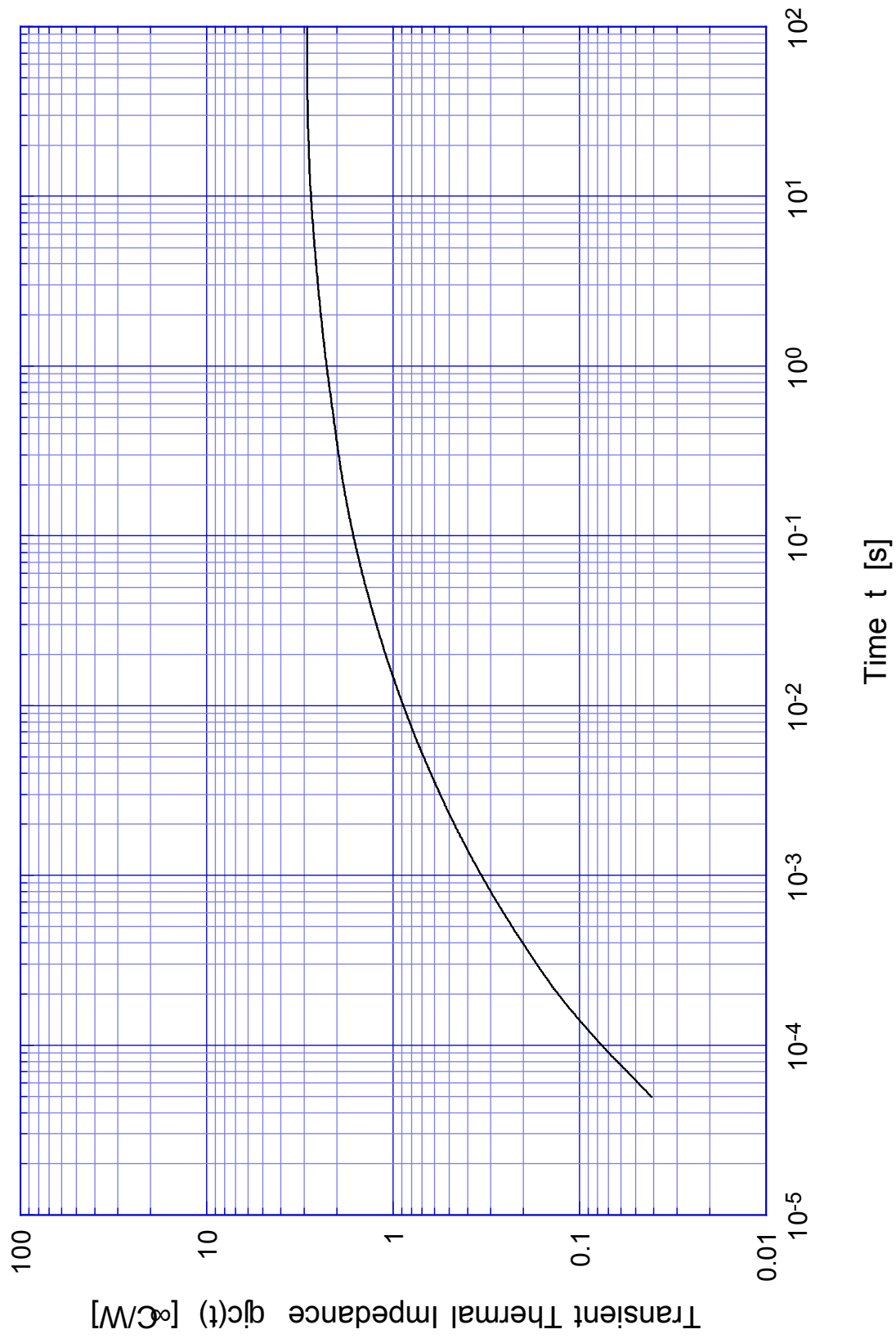


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Capacitance

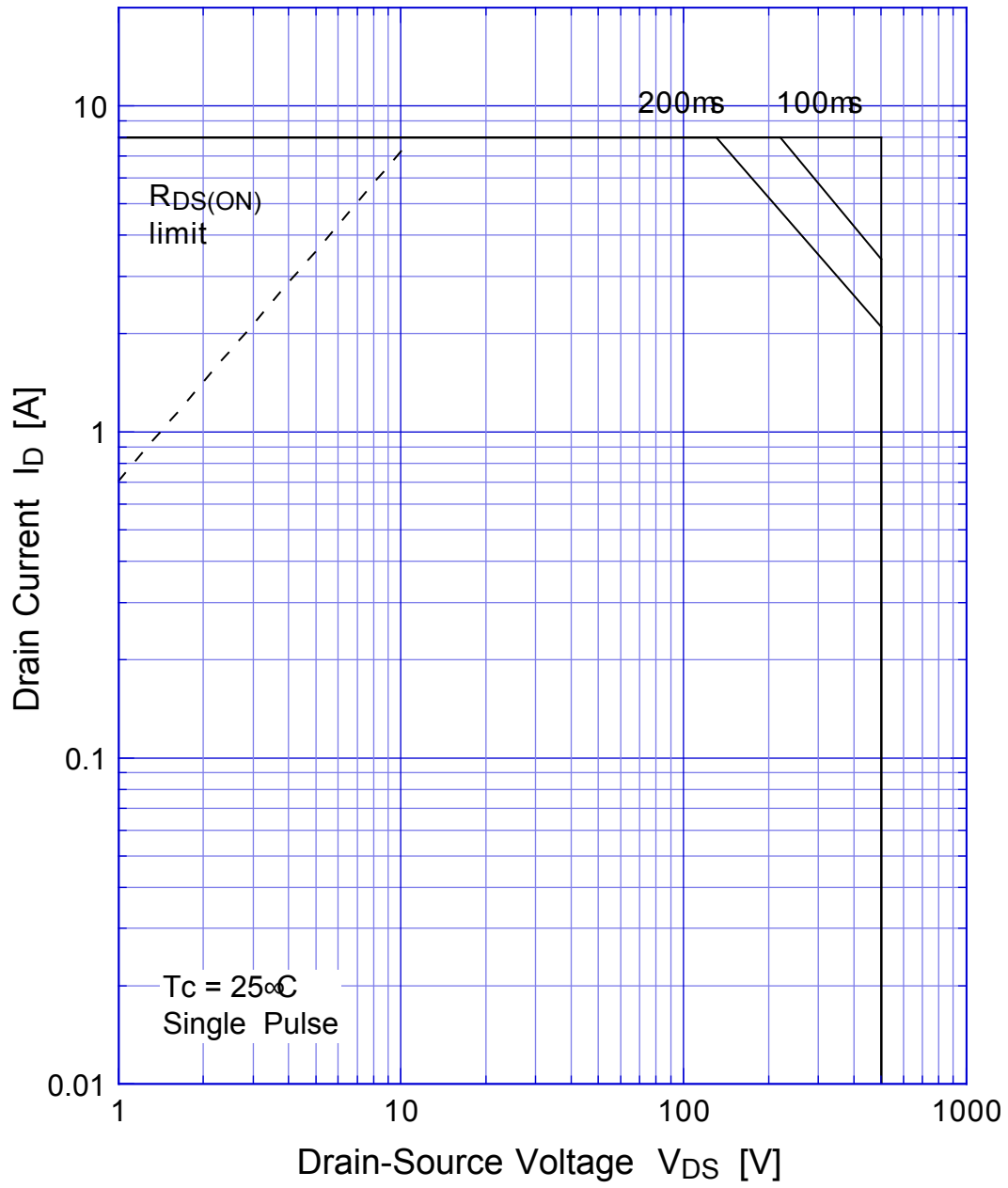


# MA4520      Transient Thermal Impedance



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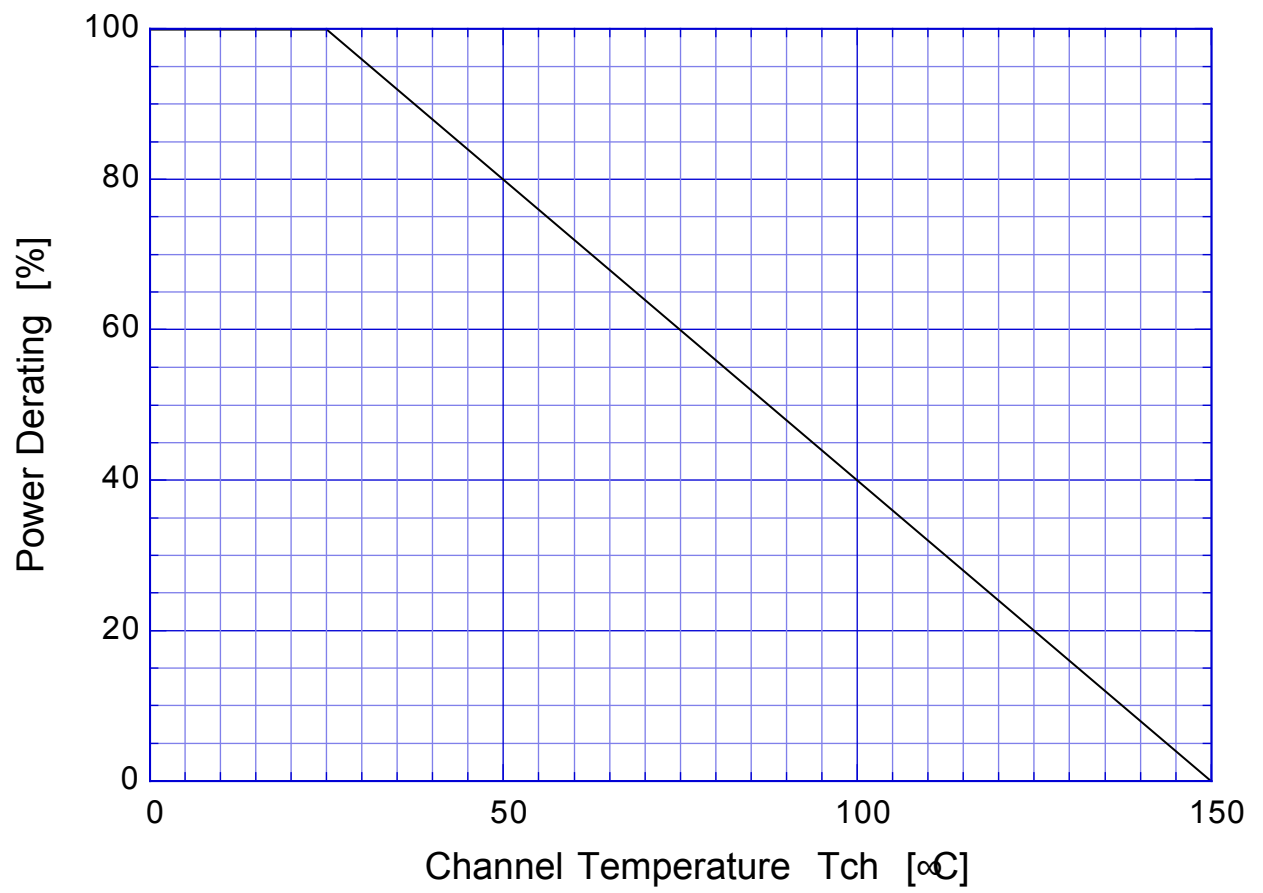
Safe Operating Area





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Power Derating



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