MOSFET ELECTRICAL CHARACTERISTICS (T_J = 25 C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Drain−to−Source Clamped Breakdown Voltage (V_{GS} = 0 Vdc, I_D = 250 μAdc) (V_{GS} = 0 Vdc, I_D = 250 μAdc, T_J = 150 C) (Note 4)	$V_{(BR)DSS}$	 42 42	 46 44	 50 50	Vdc
Zero Gate Voltage Drain Current (V_{DS} = 32 Vdc, V_{GS} = 0 Vdc) (V_{DS} = 32 Vdc, V_{GS} = 0 Vdc, T_J = 150 C) (Note 4)	I_{DSS}		 1.5 6.5	 5.0	μAdc
Gate Input Current (V_{GS} = 5.0 Vdc, V_{DS} = 0 Vdc)	I_{GSSF}		50	100	μAdc
ON CHARACTERISTICS					
Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = 1.2 mAdc) Threshold Temperature Coefficient	$V_{GS(th)}$	1.0	1.8 5.0	2.0	Vdc −mV/ C
Static Drain−to−Source On−Resistance (Note 5) (V_{GS} = 10 Vdc, I_D = 5.0 Adc, T_J @ 25 C) (V_{GS} = 10 Vdc, I_D = 5.0 Adc, T_J @ 150 C) (Note 4)	$R_{DS(on)}$		 23 43	 29 55	mΩ
Static Drain−to−Source On−Resistance (Note 5) (V_{GS} = 5.0 Vdc, I_D = 5.0 Adc, T_J @ 25 C) (V_{GS} = 5.0 Vdc, I_D = 5.0 Adc, T_J @ 150 C) (Note 4)	$R_{DS(on)}$		 28 50	 34 60	mΩ
Source−Drain Forward On Voltage (I_S = 5 A, V_{GS} = 0 V)	V_{SD}		0.80	1.1	V
SWITCHING CHARACTERISTICS (Note 4)					
Turn−ON Time (10% V_{IN} to 90% I_D)	V_{IN} = 0 V to 5 V, V_{DD} = 25 V I_D = 1.0 A, Ext R				

TYPICAL PERFORMANCE CURVES

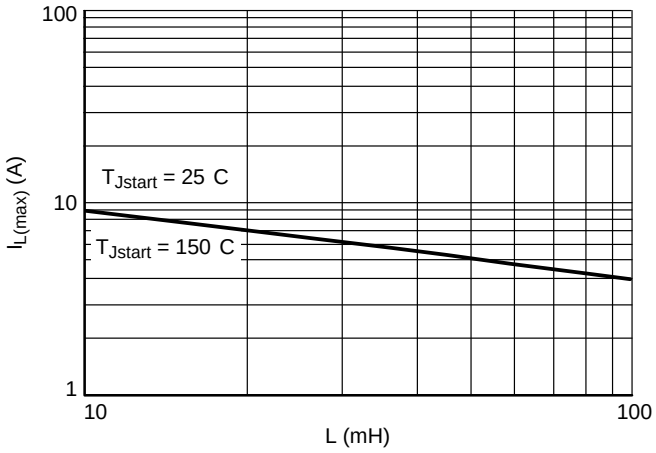


Figure 2. Single Pulse Maximum Switch off Current vs. Load Inductance

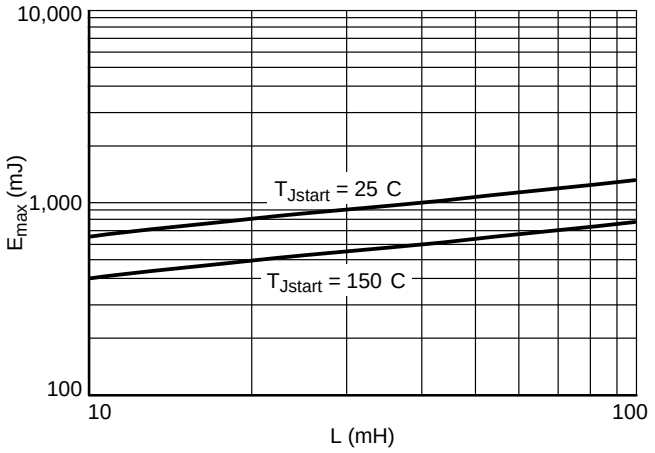
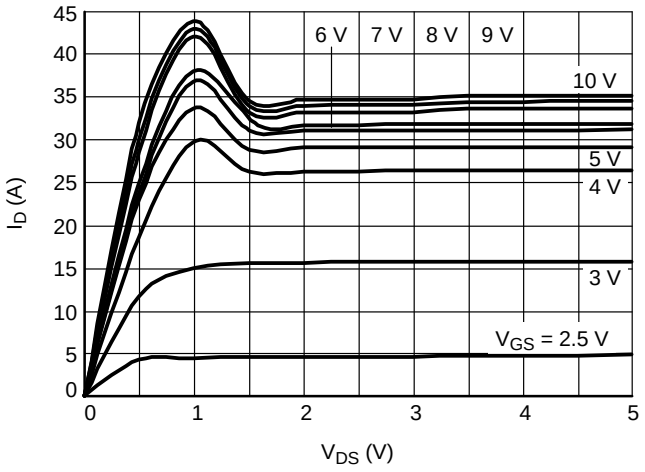
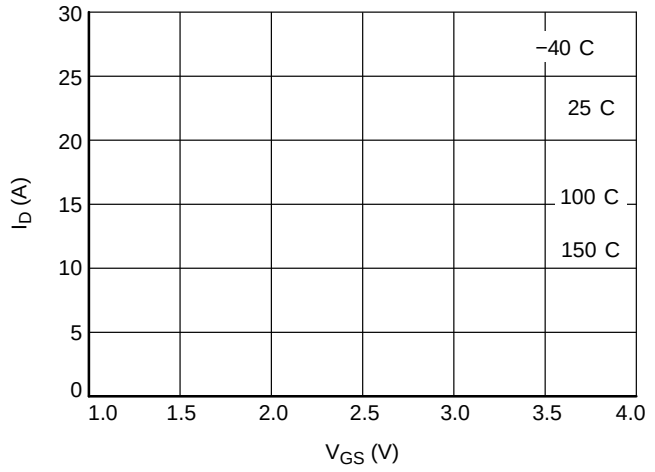


Figure 3. Single Pulse Maximum Switching Energy vs. Load Inductance





TYPICAL PERFORMANCE CURVES

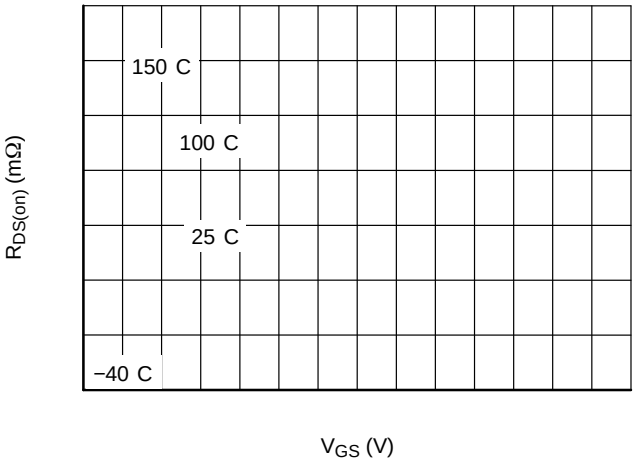


Figure 8. $R_{DS(on)}$ vs. Gate Source Voltage

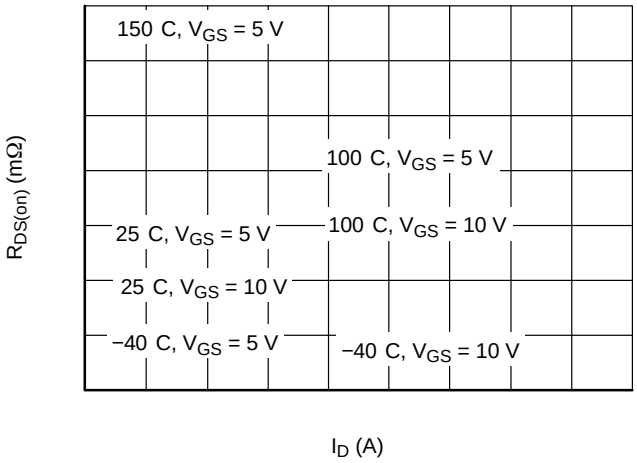


Figure 9. $R_{DS(on)}$ vs. Drain Current

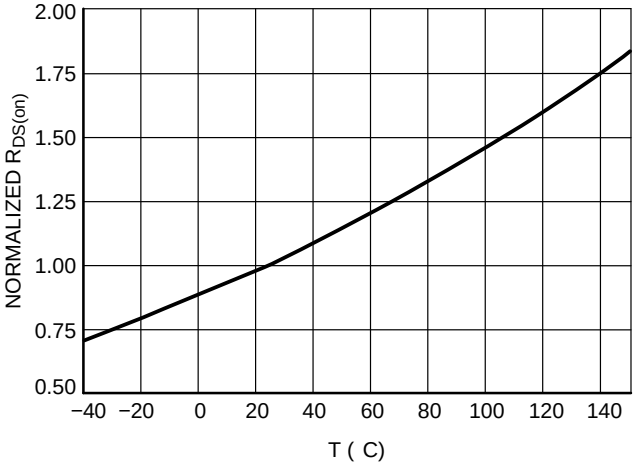


Figure 10. Normalized $R_{DS(on)}$ vs. Temperature (I_D = 5 A)

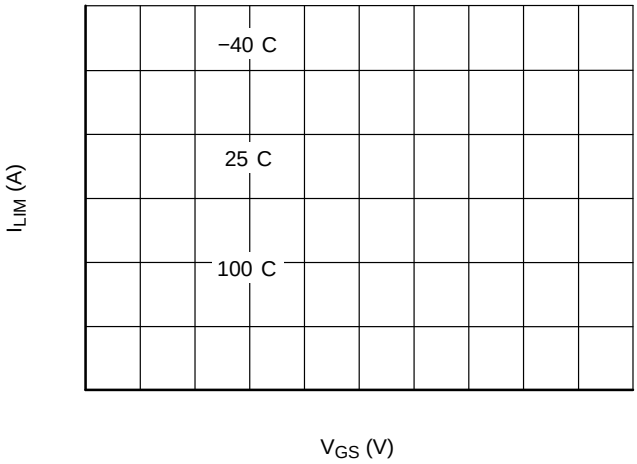


Figure 11. Current Limit vs. Gate Source Voltage (V_{DS} = 10 V)

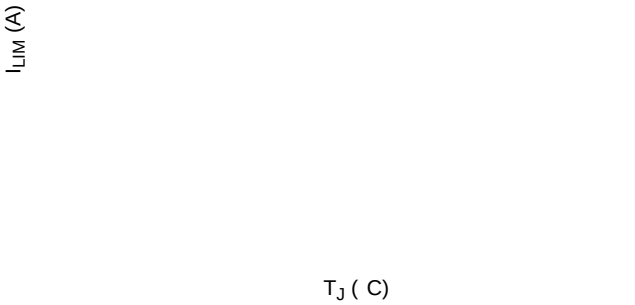


Figure 12. Current Limit vs. Junction Temperature (V_{DS} = 10 V)

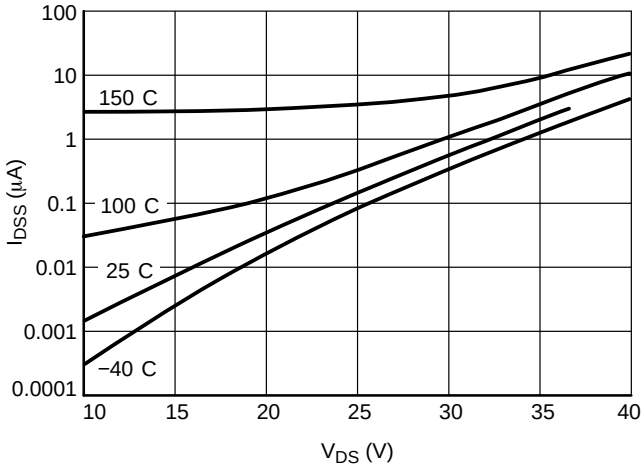


Figure 13. Drain to Source Leakage Current (V_{GS} = 0 V)

TEST CIRCUITS AND WAVEFORMS

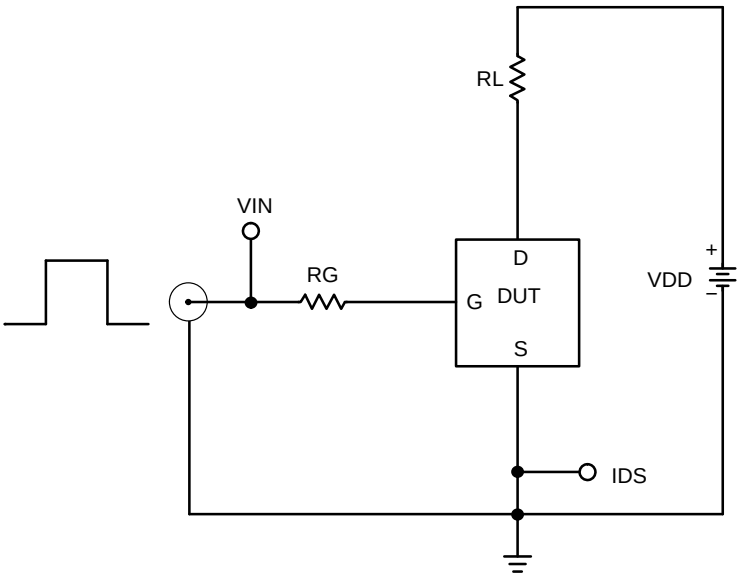


Figure 22. Resistive Load Switching Test Circuit

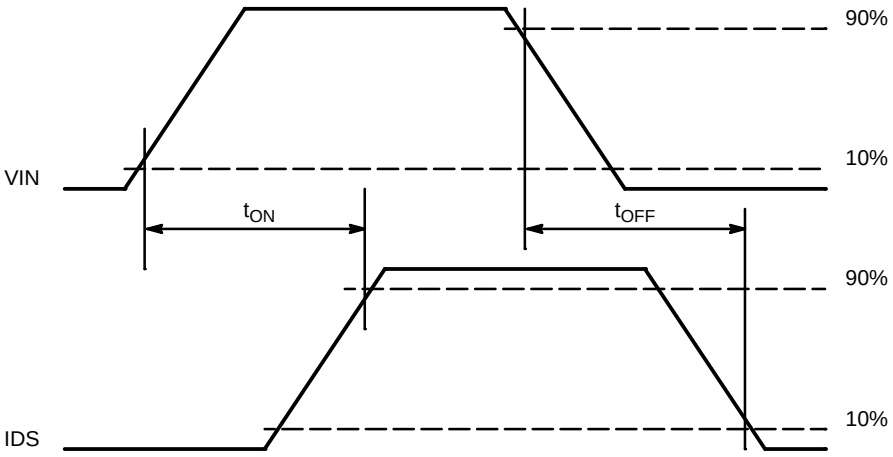
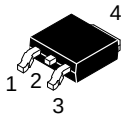


Figure 23. Resistive Load Switching Waveforms



SCALE 1:1

DPAK (SINGLE GAUGE)
CASE 369C
ISSUE G

DATE 31 MAY 2023

STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 2:
PIN 1. GATE
2. DRAIN
3. SOURCE
4. DRAIN

STYLE 3:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

STYLE 4:
PIN 1. CATHODE
2. ANODE
3. GATE
4. ANODE

STYLE 5:
PIN 1. GATE
2. ANODE
3. CATHODE
4. ANODE

STYLE 6:
PIN 1. MT1
2. MT2
3. GATE
4. MT2

STYLE 7:
PIN 1. GATE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 8:
PIN 1. N/C
2. CATHODE
3. ANODE
4. CATHODE

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. RESISTOR ADJUST
4. CATHODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. ANODE