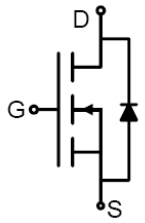
Features

- N-channel planar MOSFET
- Fast Switching
- Low ON Resistance
- Low Gate Charge



Equivalent Circuit

Application

- Switch Mode Power (SMPS)
- Uninterruptible Power Supply (UPS)

Key Performance Parameters

Parameter	Value	Unit
BV_{DSS}	200	V
I_D	18	A
$R_{DS(ON)\_typ}$	140	mΩ

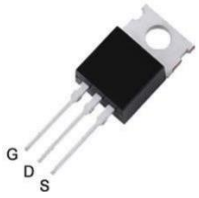


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Table 1. Absolute Maximum Ratings (T_C=25℃ unless otherwise specified)

Symbol	Parameter		Value	Units
V_{DSS}	Drain-Source Voltage		200	V
V_{GS}	Gate-Source Voltage		±20	
I_D	Continuous Drain Current	(T_C=25℃)	18	A
I_{DM}	Pulsed Drain Current		72	
E_{AS}	Single Pulse Avalanche Energy		115	mJ
P_D	Maximum Power Dissipation	(T_C=25℃)	100	W
T_J ,T_{STG}	Operating Junction Storage Temperature Range		-55 to +150	℃

Table 2. Thermal Characteristic

Symbol	Parameter	Value	Units
R_{thJC}	Thermal resistance , Junction to Case	1.3	℃/ W
R_{thJA}	Thermal Resistance, Junction-to-Ambient	100	℃/ W

Table 3. Electrical Characteristics (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
V_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250μA	200	--	--	V
$V_{GS(th)}$	Gate-Source Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	1	--	2	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =200 V, V_{GS} = 0 V	--	--	1	μA
I_{GSSF}	Gate-Body Leakage Current,Forward	V_{DS} = 0 V ,V_{GS} = 20V	--	--	100	nA
I_{GSSR}	Gate-Body Leakage Current,Reverse	V_{DS} = 0 V ,V_{GS} = -20V	-100	--	--	
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS} = 10V, I_D =9A	--	140	180	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	V_{GS} = 0V,V_{DS} =25V,f = 1.0MHz	--	863	--	pF
Coss	Output Capacitance		--	165	--	
Crss	Reverse Transfer Capacitance		--	90	--	
$t_{d(on)}$	Turn-on Delay Time	V_{DD} =100V, I_D=18A R_g =25Ω	--	38	--	ns
t_r	Turn-on Rise Time		--	45	--	
$t_{d(off)}$	Turn-off Delay Time		--	255	--	
t_f	Turn-off Fall Time		--	72	--	
Q_g	Total Gate Charge	I_D =18A, V_{DD}=160V V_{GS} = 10V	--	53	--	nC
Q_{gs}	Gate-Source Charge		--	5.8	--	
Q_{gd}	Gate-Drain Charge		--	30	--	
Source-Drain Body Diode Characteristics						
V_{SD}	Body Diode Forward Voltage	V_{GS} = 0V，I_{SD} =18A	--	--	1.5	V
I_S	Continuous Diode Forward Current	T_C= 25℃	--	--	18	A
t_{rr}	Reverse Recovery Time	I_S=18A di/dt = 100A/μs	--	180	--	ns
Q_{rr}	Reverse Recovery Charge		--	0.9	--	μC

Figure 1. Output Characteristics (T_J = 25ºC)

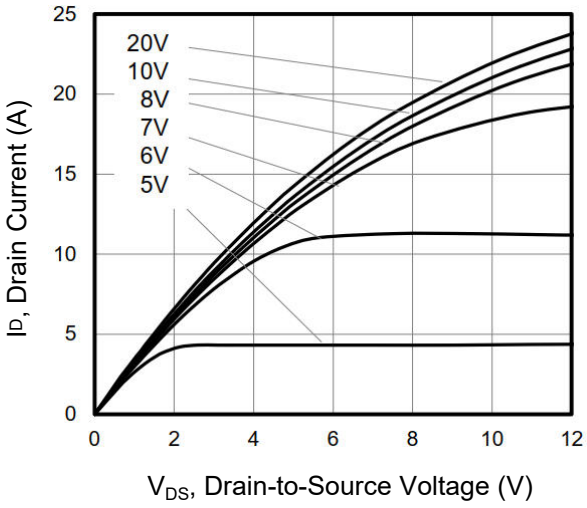


Figure 2. Body Diode Forward Voltage

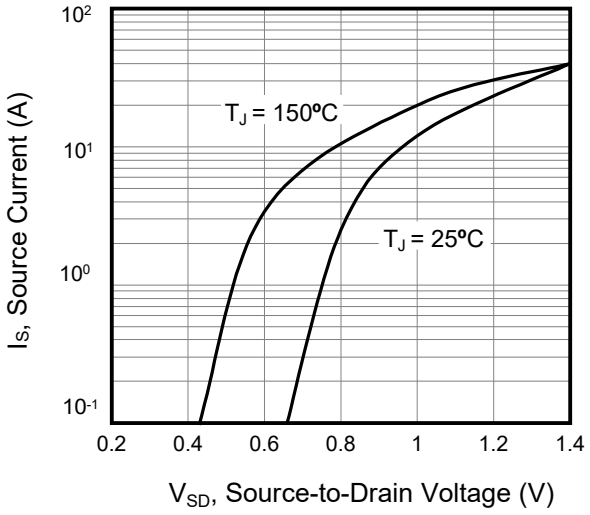


Figure 3. Drain Current vs. Temperature

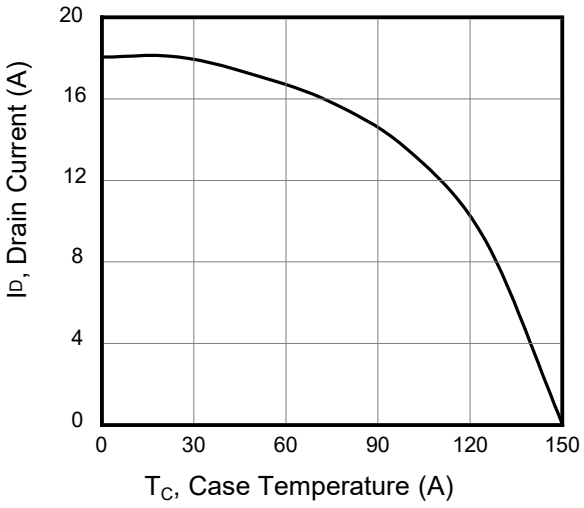


Figure 4. BV_{DSS} Variation vs. Temperature

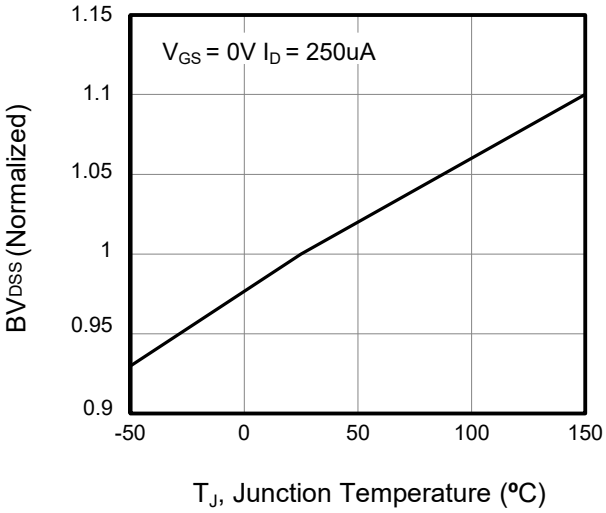


Figure 5. Transfer Characteristics

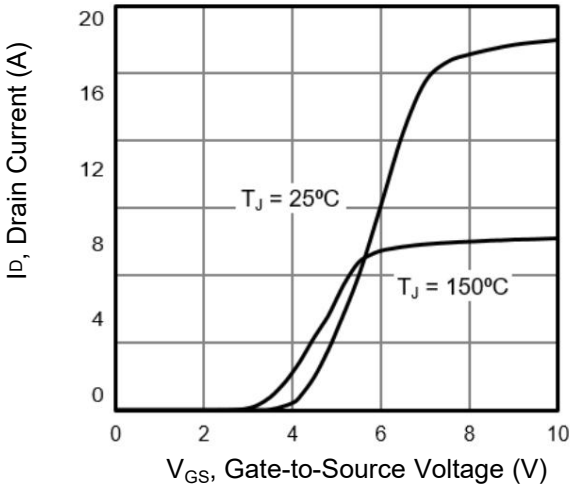


Figure 6. On-Resistance vs. Temperature

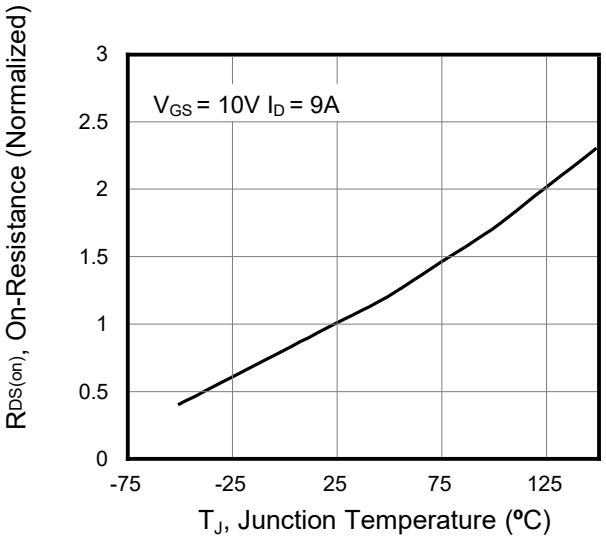


Figure 7. Capacitance

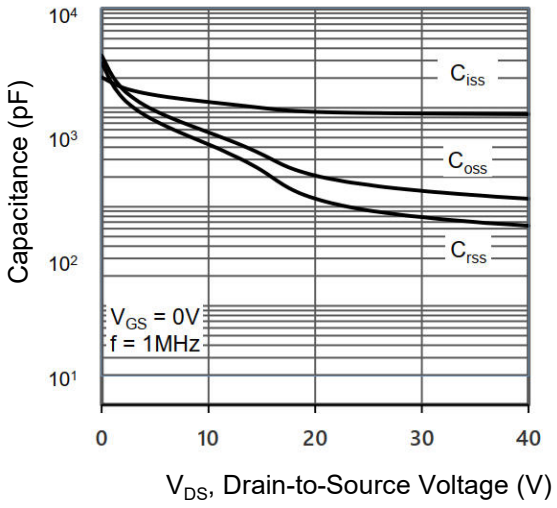


Figure 8. Gate Charge

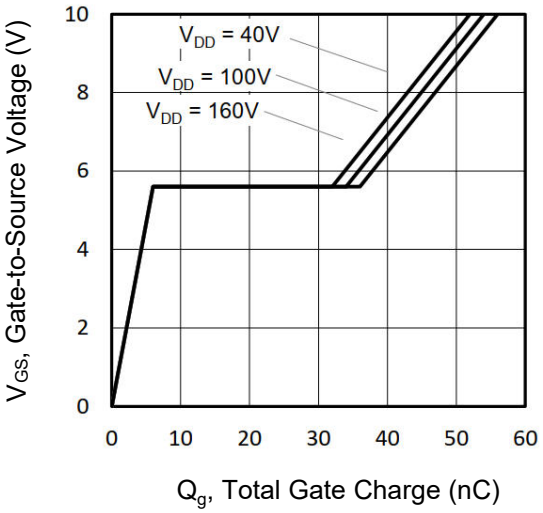


Figure 9. Transient Thermal Impedance

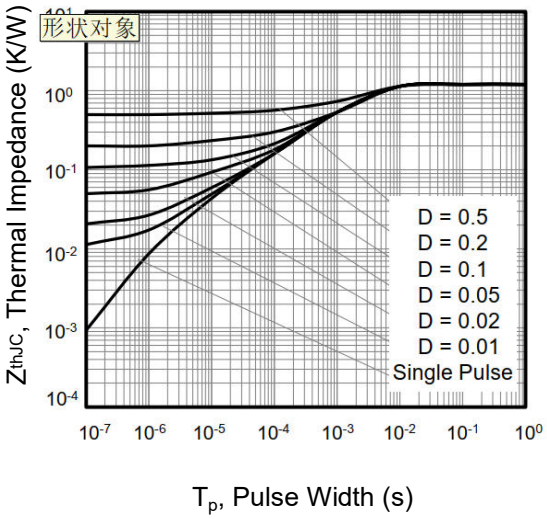


Figure A：Gate Charge Test Circuit and Waveform

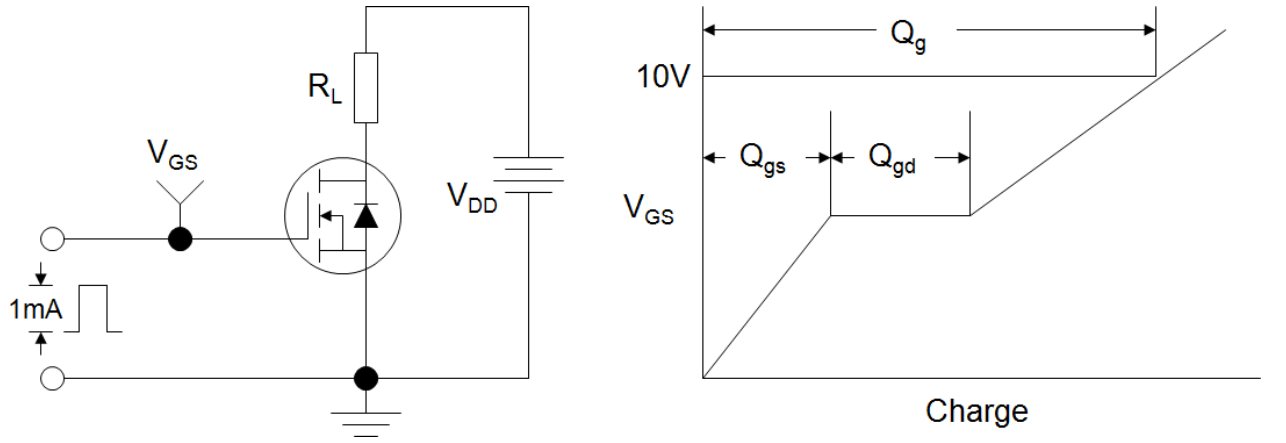


Figure B：Resistive Switching Test Circuit and Waveform

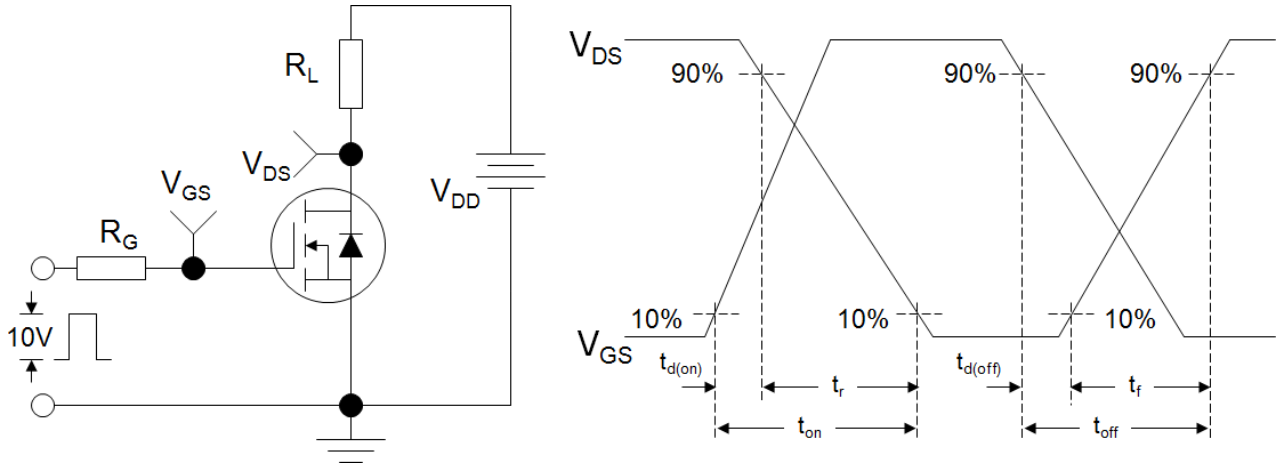
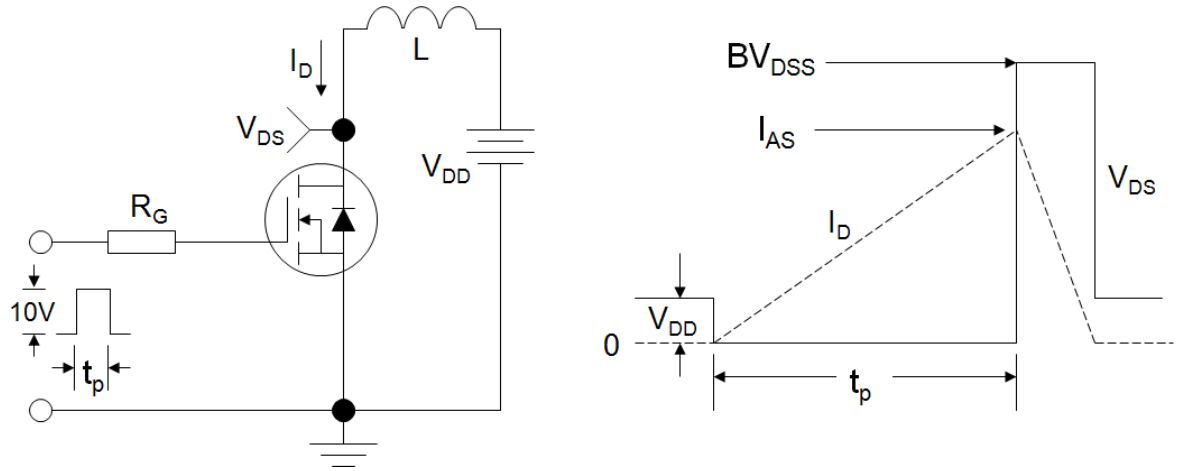


Figure C：Unclamped Inductive Switching Test Circuit and Waveform



Package Dimensions

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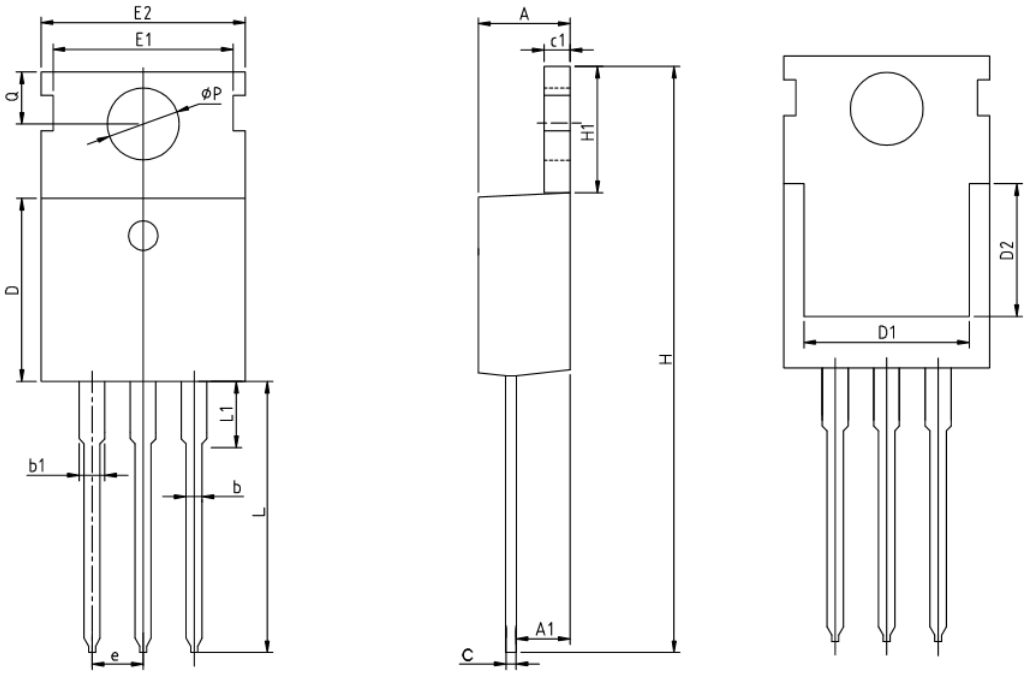
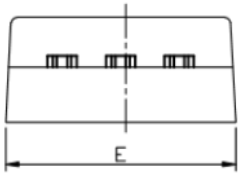
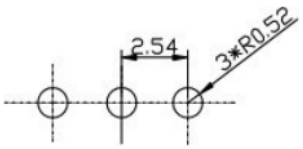




RECOMMENDED LAND PATTERN



UNIT:mm

	MIN	NOM	MAX
A	4.40	4.60	4.80
A1	2.25	2.40	2.55
b	0.72	0.82	0.92
b1	1.12	1.27	1.42
c	0.40	0.50	0.60
c1	1.20	1.30	1.40
D	8.80	9.10	9.40
D1	7.75	7.95	8.15
D2	6.55	6.75	6.95
e		2.54BSC	
E	9.65	10.00	10.35
E1		8.70	
E2	9.70	10.00	10.30
H	28.70	29.20	29.70
H1	6.25	6.50	6.85
L	13.20	13.50	13.80
L1	2.80	3.10	3.40
Q	2.60	2.80	3.00
ΦP	3.45	3.60	3.75

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