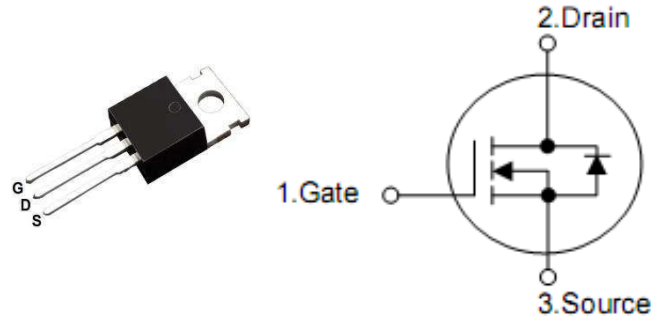


100V/150A N-Channel Advanced Power MOSFET

B_{VDSS}	100V
I_D	150A
R_{DS(on)} (typ.) @ V _{GS} = 10V, I _D = 60A	4.5mΩ



Features

- N-Channel MOSFET
- Trench MOSFET
- Fast Switching Speed
- 100% avalanche tested

Application

- General purpose power amplifier
- High-efficiency DC-DC converters
- UPS and motor control
- Automotive
- Load switching and general purpose

Product	Package	Marking	Q'ty
M150N10K	TO-220	EV150N10PZ	1000PCS/BOX

Absolute Maximum Ratings (T_C=25°C unless otherwise specified)

Symbol	Parameter		Max.	Units
V _{DSS}	Drain-Source Voltage		100	V
V _{GSS}	Gate-Source Voltage		± 25	V
I _D	Continuous Drain Current	T _C = 25°C	150	A
		T _C = 100°C	105*	A
I _{DM}	Pulsed Drain Current (note 1)		480	A
EAS	Single pulsed avalanche energy (note 2)		960	mJ
P _D	Power Dissipation	T _C = 25°C	396	W
T _J , T _{STG}	Operating and Storage Temperature Range		-55 to +150	°C
R _{θJC}	Thermal resistance, Junction-to-case		0.48	°C/W
R _{θJA}	Thermal resistance, Junction-to-ambient		62.5	°C/W

*Drain current limited by maximum junction temperature

100V/150A N-Channel Advanced Power MOSFET

Electrical Characteristics (T_C=25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	100	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 100V, V _{GS} = 0V	-	-	1	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} = 0V, V _{GS} = ±25V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2.2	3.0	4.0	V
R _{DS(on)}	Static Drain-Source On-Resistance (note 3)	V _{GS} = 10V, I _D = 60A	-	4.5	5.5	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} = 50V, V _{GS} = 0V, f = 1.0MHz	-	14900	-	pF
C _{oss}	Output Capacitance		-	657	-	pF
C _{rss}	Reverse Transfer Capacitance		-	493	-	pF
Q _g	Total Gate Charge	V _{DS} = 50V, I _D = 60A, V _{GS} = 10V(note3)	-	232	-	nC
Q _{gs}	Gate-Source Charge		-	59	-	nC
Q _{gd}	Gate-Drain("Miller") Charge		-	61	-	nC
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DD} = 50V, I _D = 60A R _G = 2.5Ω(note3)	-	35	-`	ns
t _r	Turn-On Rise Time		-	70	-	ns
t _{d(off)}	Turn-Off Delay Time		-	122	-	ns
t _f	Turn-Off Fall Time		-	62	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current (note1,3)		-	-	150	A
I _{SM}	Pulsed Source Current(note1,3)		-	-	480	A
V _{SD}	Drain to Source Diode Forward Voltage (note3)	ISD = 30A, VGS = 0V	-	-	1.3	V

Note:1.repetitive rating:pulse width limited by maximum junction temperature

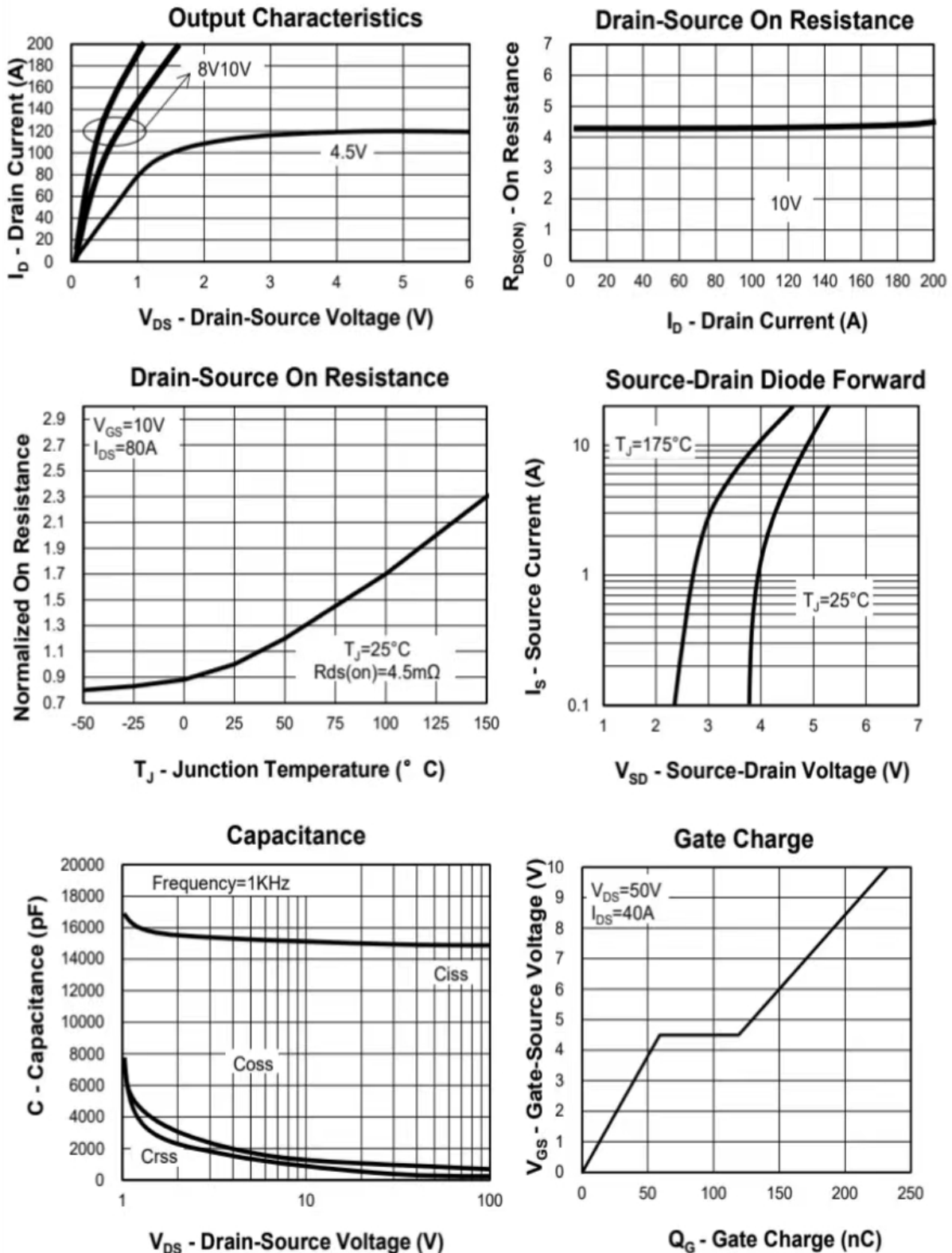
2.L=0.5mH,I_{AS}=60A,V_{DD}=50V,R_G=25Ω,staring T_J=25°C

3.Pulse test:pulse width≤300μs,duty cycle≤2%

4.Guaranteed by design, not subject to production testing.

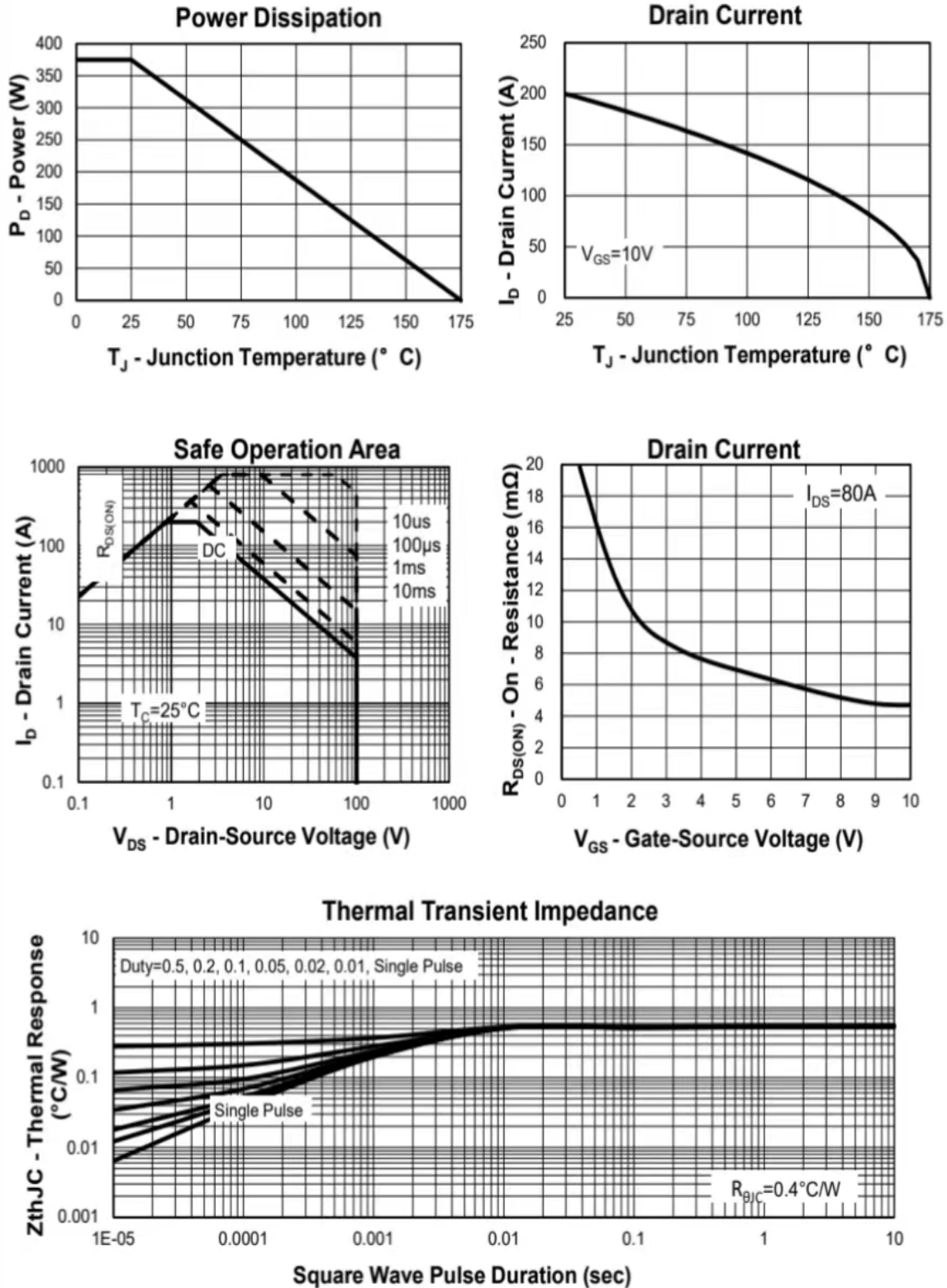
100V/150A N-Channel Advanced Power MOSFET

Typical Characteristics



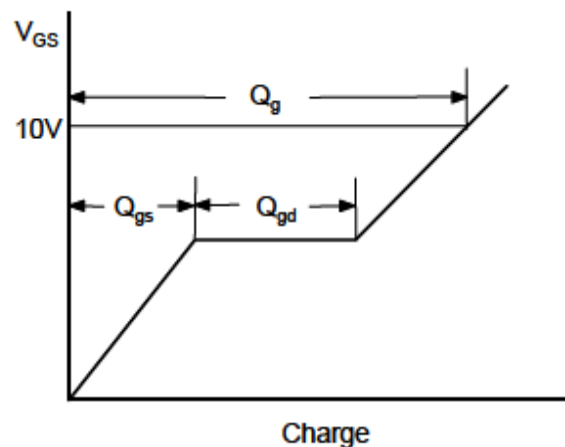
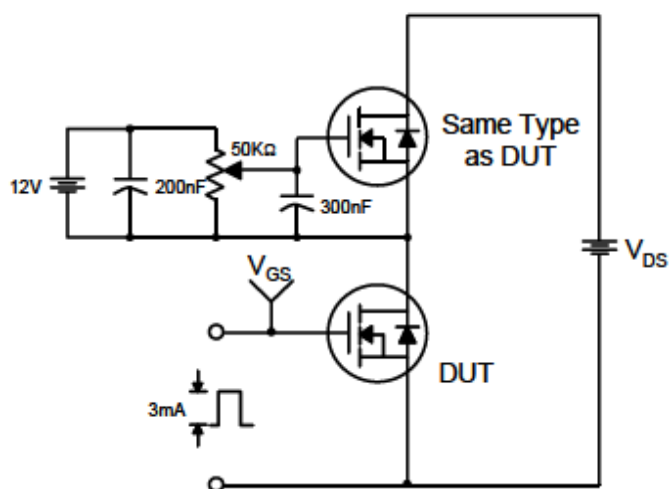
100V/150A N-Channel Advanced Power MOSFET

Typical Characteristics

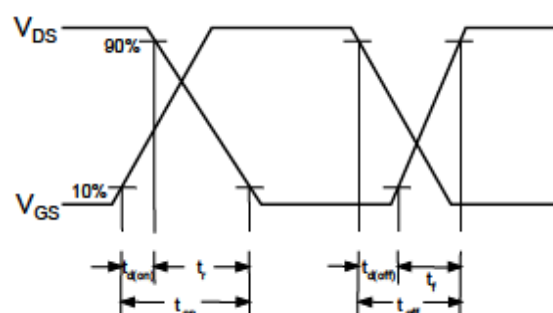
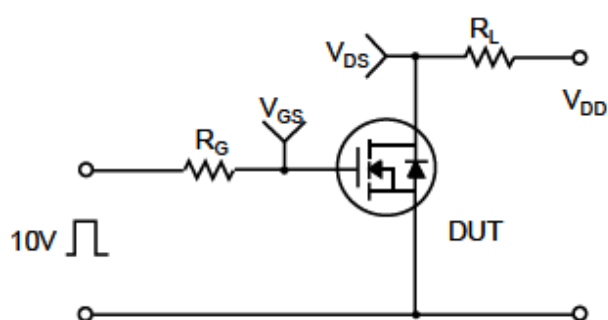


100V/150A N-Channel Advanced Power MOSFET

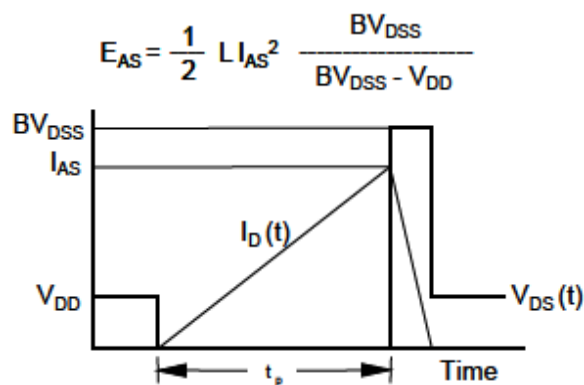
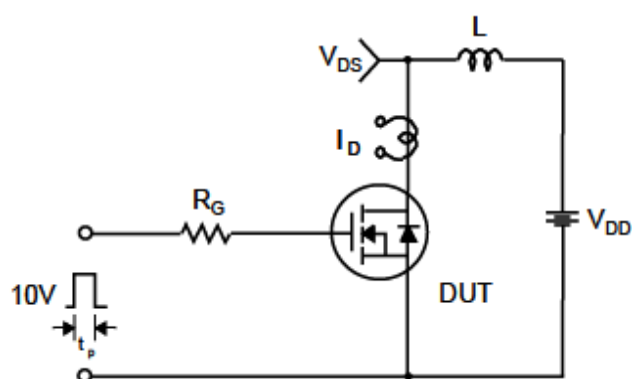
Gate Charge Test Circuit & Waveform



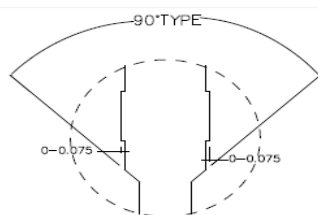
Resistive Switching Test Circuit & Waveforms



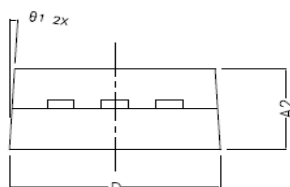
Unclamped Inductive Switching Test Circuit & Waveforms



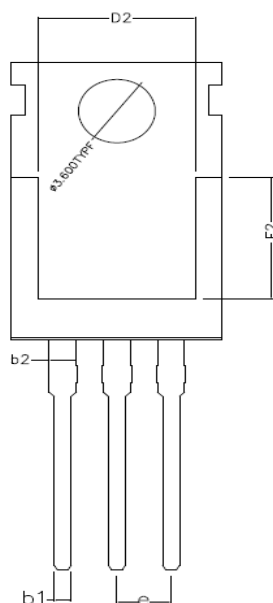
100V/150A N-Channel Advanced Power MOSFET



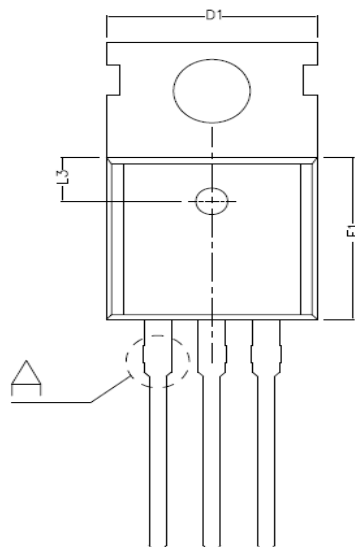
DETAIL A



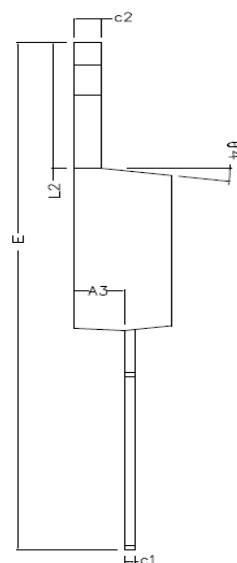
SIDE VIEW



BOTTOM VIEW



TOP VIEW



COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A2	4.470	4.570	4.670
A3	2.300	2.350	2.400
b1	0.750	0.800	0.850
b2	1.27 TYPE		
c1	0.450	0.500	0.550
c2	1.250	1.300	1.380
D	9.900	10.000	10.100
D1	10.000TYPE		
D2	8.000TYPE		
E	28.660	28.860	29.060
E1	9.000	9.100	9.200
E2	7.000TYPE		
e	2.540TYPE		
L2	6.350	6.500	6.650
L3	2.50TYPE		
θ1	3° TYPE		
θ2	3° TYPE		
θ3	7° TYPE		
θ4	7° TYPE		