

Description

Features

- SGT LV MOSFET technology
- Excellent Qg*Ron product(FOM)
- Extremely low on-resistance(Ron)

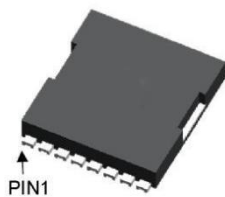
Application

- Battery management
- High current switching
- UPS

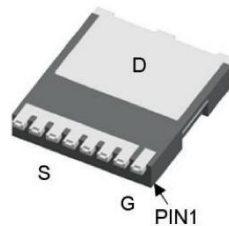
V_{DS}	100	V
$R_{ds(on),typ}@V_{gs}=10V$	2.2	mΩ
I_D	240	A



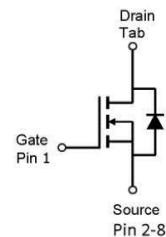
Top View



Bottom View



Pin Configuration



Package Marking and Ordering Information

Part	Marking	Package	Packing	Reel Size	Tape Width	Qty
CMS026H10T	S026H10T	Toll-8	Reel	330*28.5mm	24mm	2000pcs

Key Performance Parameters

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_{D@Tc=25^{\circ}C}$	Continuous Drain Current, $V_{GS}=10V$	240	A
$I_{D@Tc=100^{\circ}C}$	Continuous Drain Current, $V_{GS}=10V$	145	A
IDM	Pulsed Drain Current ¹	960	A
EAS	Single Pulse Avalanche Energy ⁴	1120	mJ
$PD@Tc=25^{\circ}C$	Total Power Dissipation	271	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_j	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ	Max	Units
R _{θJA}	Thermal Resistance Junction-Ambient	40	46	°C/W
R _{θJC}	Thermal Resistance Junction-Case	0.4	0.46	°C/W

Electrical Characteristics (T_J=25 °C, Unless otherwise noted)

Symbol	Parameter	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
BVDSS	Drain-Source Breakdown Voltage	100	--	--	V	V _{GS} =0V, I _D =250uA
R _{DS(ON)}	Static Drain-Source On-Resistance	--	2.2	2.6	mΩ	V _{GS} =10V, I _D =50A
V _{GS(th)}	Gate Threshold Voltage	2	3	4	V	V _{GS} =V _{DS} , I _D =250uA
IDSS	Drain-Source Leakage Current	--	--	1	uA	V _{DS} =100V, V _{GS} =0V, T _J =25°C
		--	--	10	uA	V _{DS} =80V, V _{GS} =0V, T _J =125°C
IGSS	Gate-Source Leakage Current	--	--	±100	nA	V _{GS} =±20V, V _{DS} =0V
g _{fs}	Forward Transconductance	--	39	--	S	V _{DS} =5V, I _D =50A
R _g	Gate Resistance	--	1.2	--	Ω	V _{DS} =0V, V _{GS} =0V, f=1MHz
Q _g	Total Gate Charge ^{2,3}	--	133	--	nC	V _{DS} =50V, V _{GS} =10V, I _D =90A
Q _{gs}	Gate-Source Charge ^{2,3}	--	44	--		
Q _{gd}	Gate-Drain Charge ^{2,3}	--	38	--		
T _{d(on)}	Turn-On Delay Time ^{2,3}	--	30	--	ns	V _{DD} =50V, V _{GS} =10V, R _G =1Ω I _D =50A
T _r	Rise Time ^{2,3}	--	40	--		
T _{d(off)}	Turn-Off Delay Time ^{2,3}	--	80	--		
T _f	Fall Time ^{2,3}	--	35	--	pF	V _{DS} =50V, V _{GS} =0V, f=1MHz
C _{iss}	Input Capacitance	--	8580	--		
C _{oss}	Output Capacitance	--	2260	--		
C _{rss}	Reverse Transfer Capacitance	--	63	--		

Diode Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Units
T _{rr}	Body Diode Reverse Recovery Time	IF=50A, di/dt=100A/us	--	80	--	ns
Q _{rr}	Body Diode Reverse Recovery Charge		--	195	--	nC
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =50A, T _J =25°C	--	--	1.4	V

Note:

1. Repetitive Rating: Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%.
3. Essentially independent of operating temperature.
4. The EAS data shows Max. rating. The test condition is V_{DD}=50V, V_{GS}=10V, L=0.5mH.

Typical Performance Characteristics

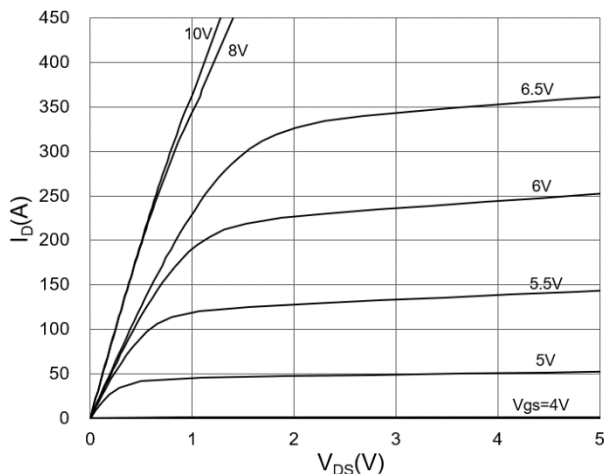
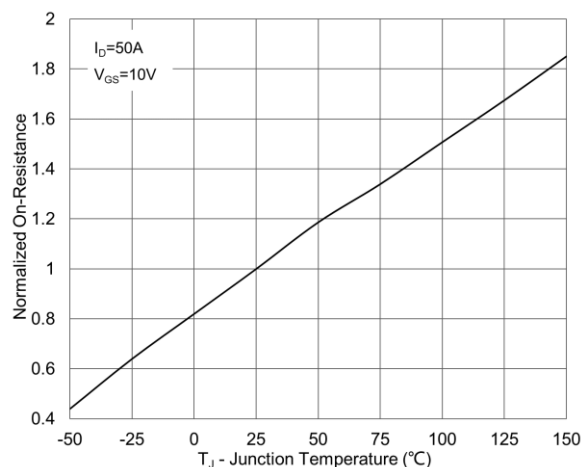
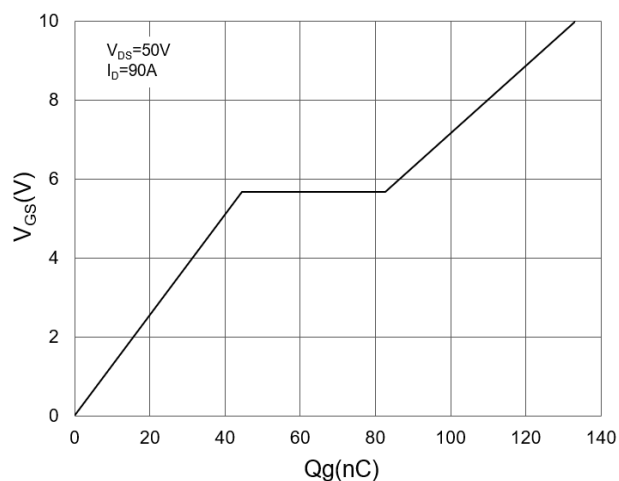
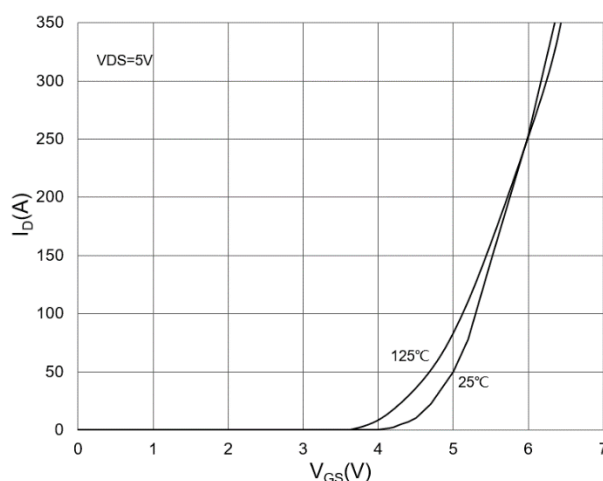
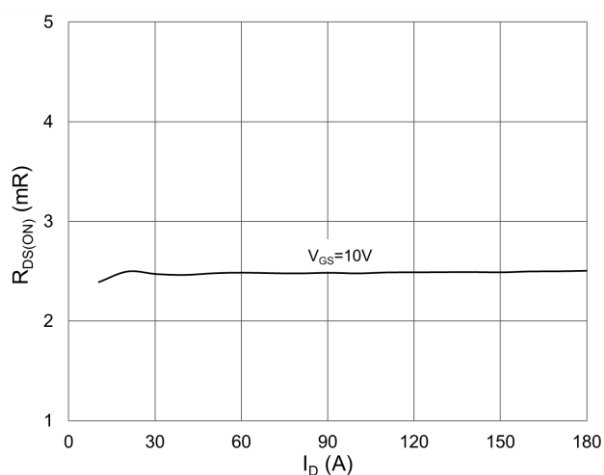
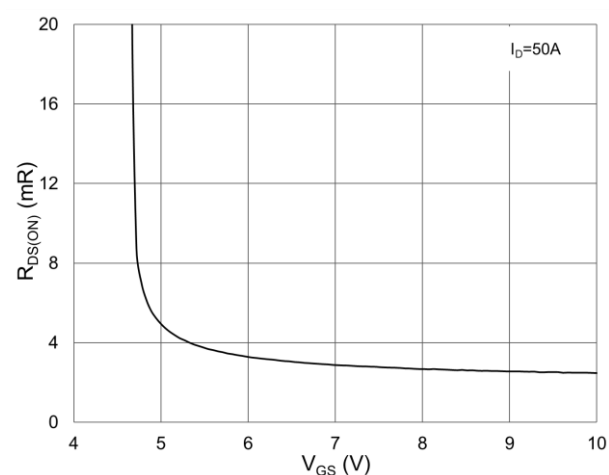
Fig1 Output Characteristics

Fig2 Normalized $R_{DS(on)}$ vs. T_J

Fig3 Gate Charge Waveform

Fig4 Transfer Characteristics

Fig5 $R_{ds(on)}$ vs. Drain Current and Gate Voltage

Fig6 $R_{ds(on)}$ vs. Gate Voltage


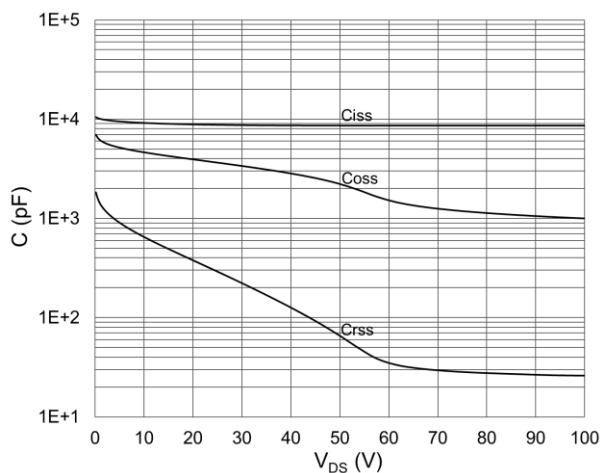
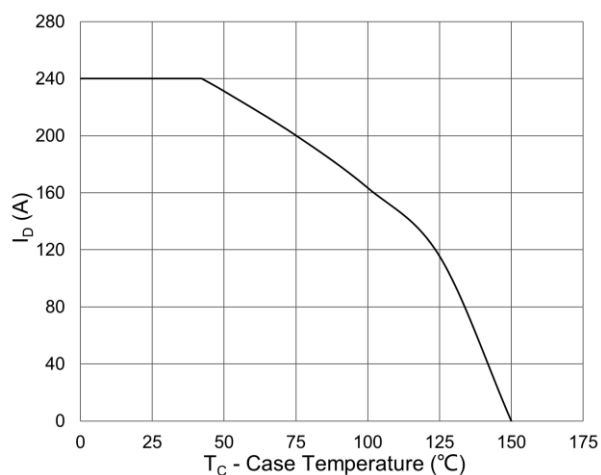
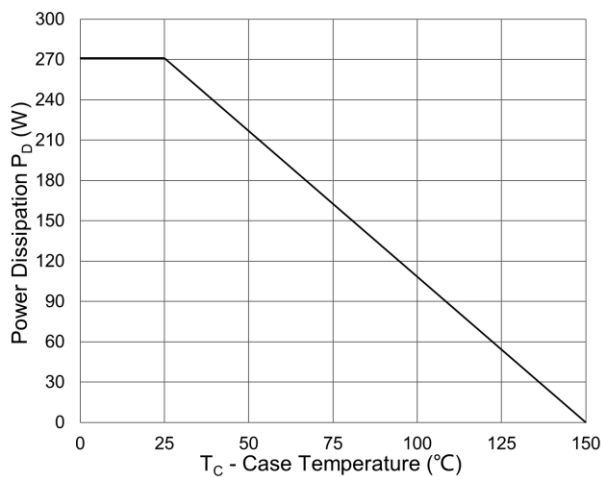
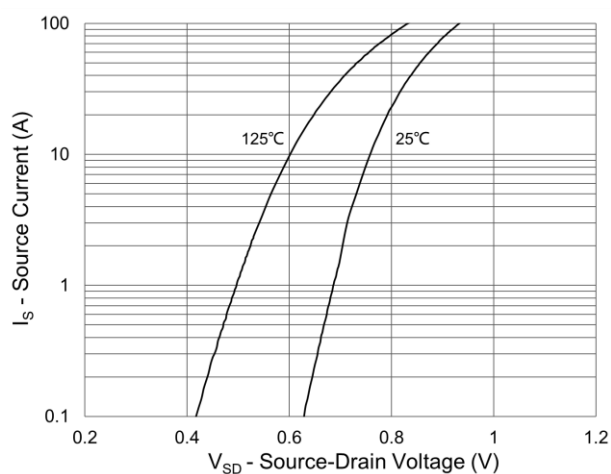
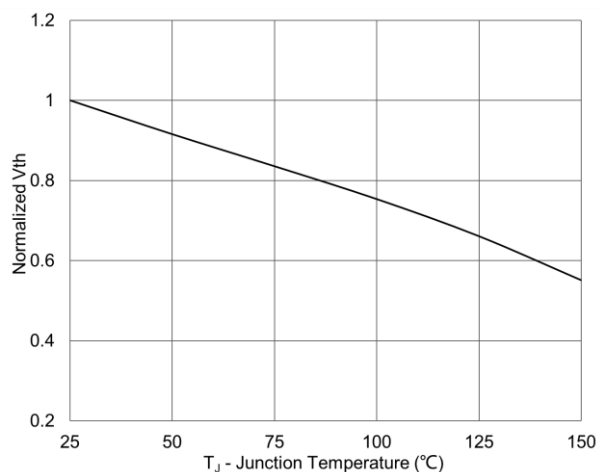
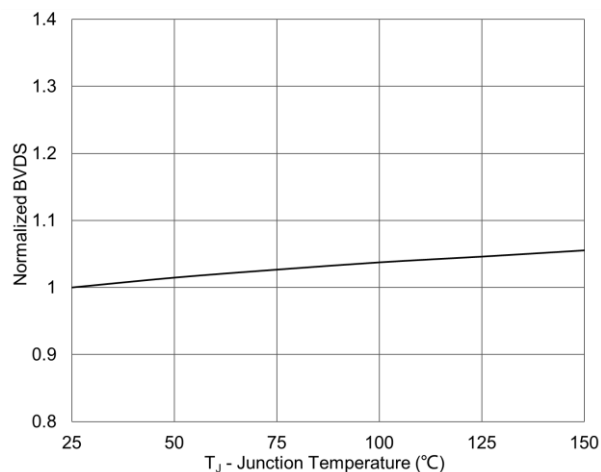
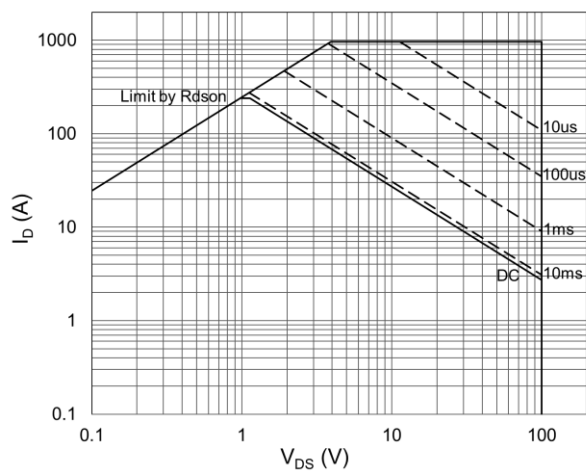
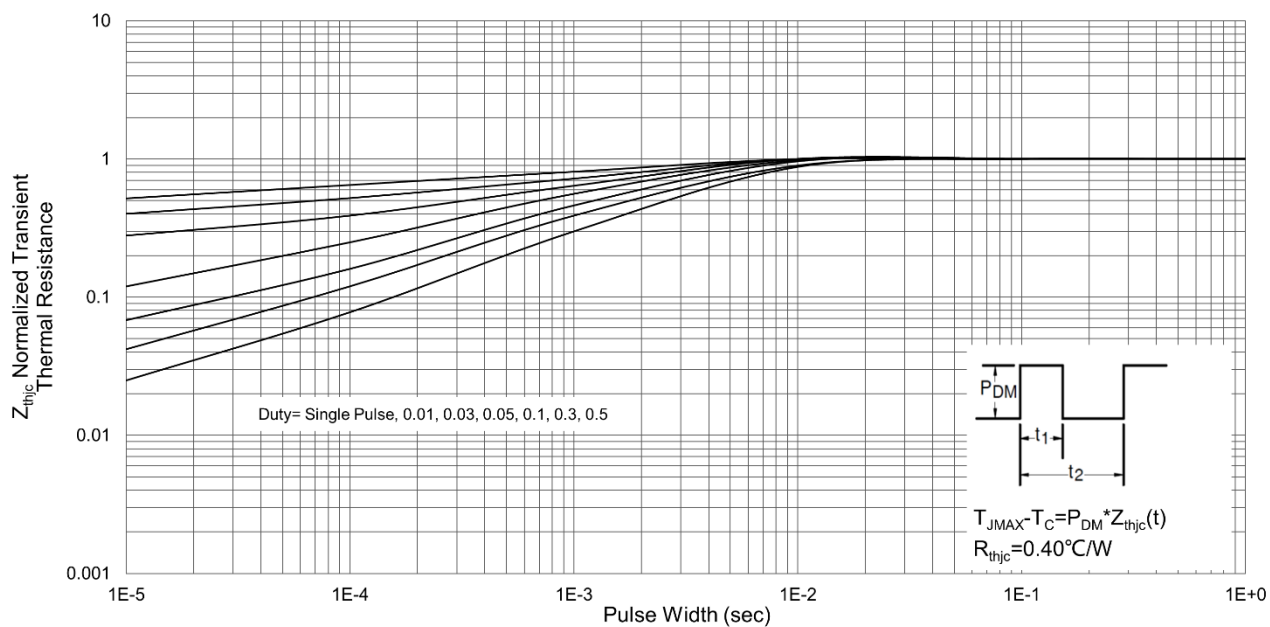
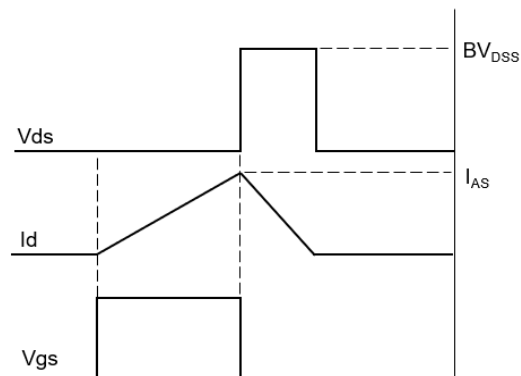
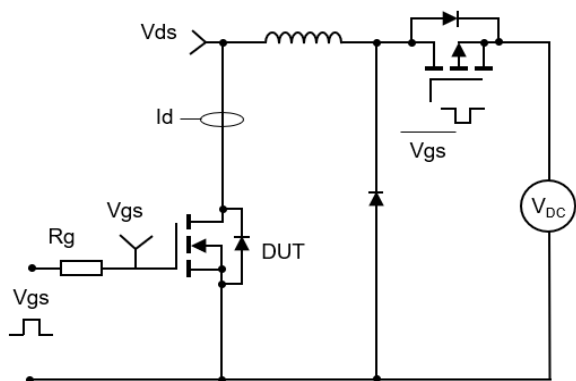
Fig7 Capacitance Characteristics

Fig8 Drain Current Derating

Fig9 Power Dissipation

Fig10 Source-Drain Diode Forward Characteristics

Fig11 Normalized Threshold Voltage vs. T_J

Fig12 Normalized Breakdown Voltage vs. T_J


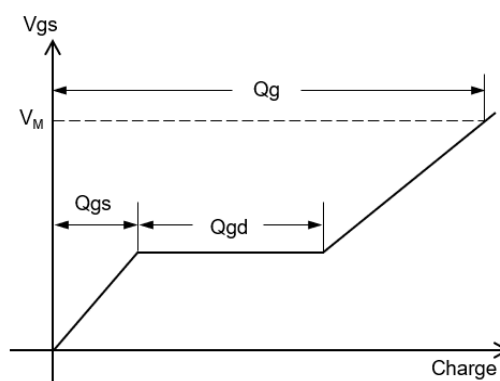
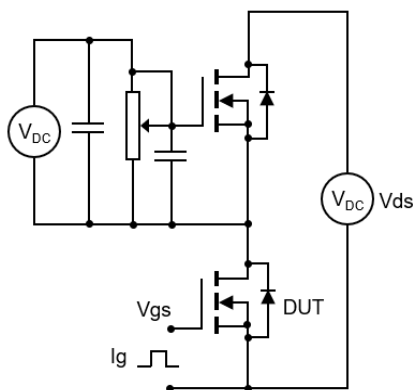
Fig13 Maximum Safe Operation Area

Fig14 Normalized Transient Impedance


Test Circuit & Waveform

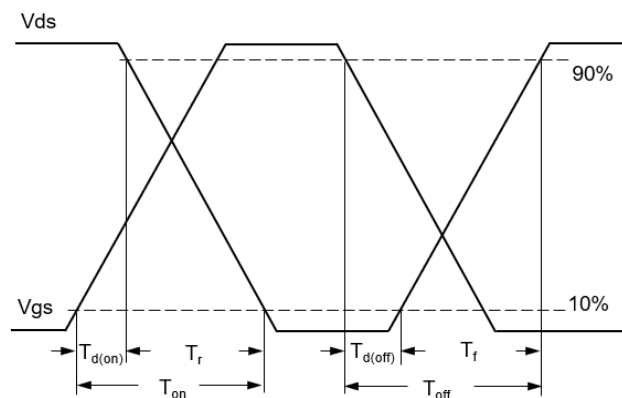
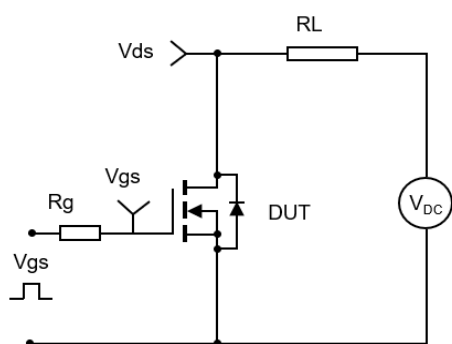
1. Unclamped Inductive Switching Test Circuit & Waveform



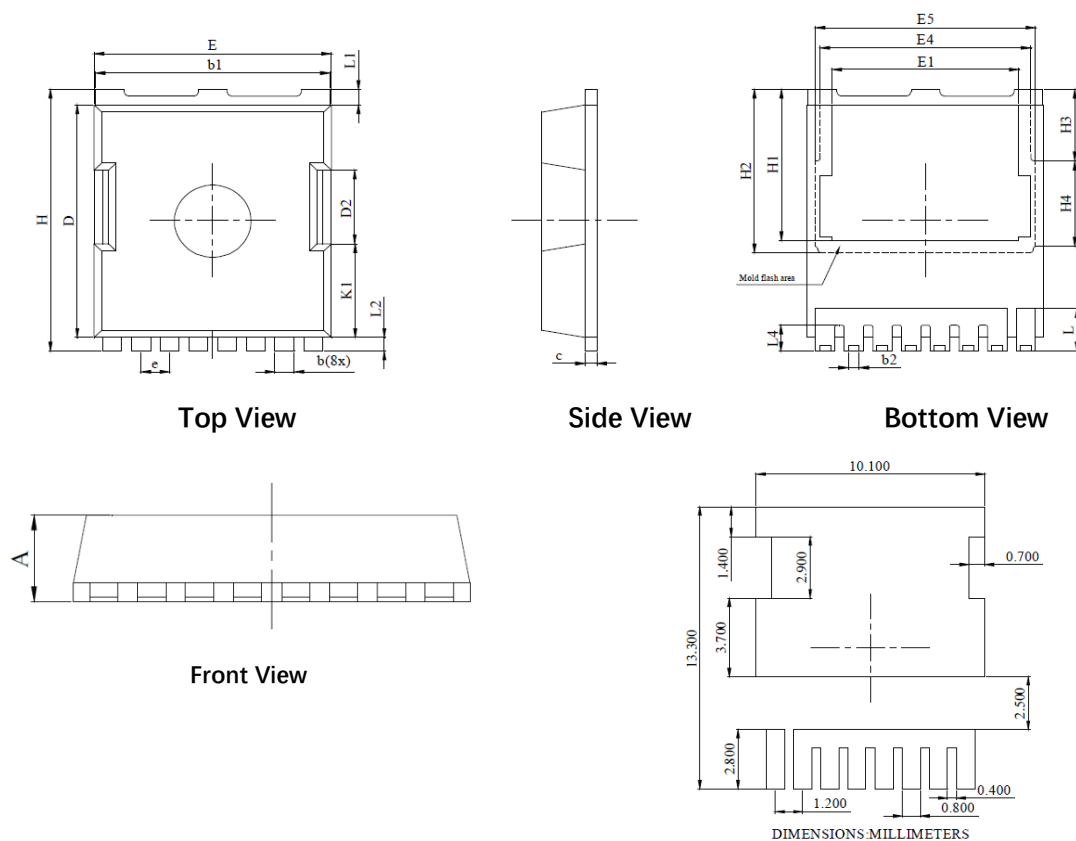
2. Gate Charge Test Circuit & Waveform



3. Resistive Switching Test Circuit & Waveform



Toll-8 Package Information



DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	2.20	2.30	2.40
b	0.70	0.80	0.90
b1	9.70	9.80	9.90
b2	0.42	0.46	0.50
c	0.40	0.50	0.60
D	10.28	10.38	10.58
D2	3.30		
E	9.70	9.90	10.10
E1	7.80		
E4	8.80		
E5	9.20		
e	1.20 (BSC)		
H	11.48	11.68	11.88
H1	6.55	6.75	6.85
H2	7.30		
H3	3.20		
H4	3.80		
K1	4.18		
L	1.70	1.90	2.10
L1	0.70		
L2	0.60		
L4	1.00	1.15	1.30