

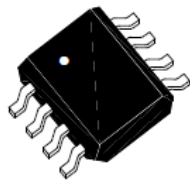


PRODUCT SUMMARY

V _{DSS}	I _D	R _{DS(on)} (m-ohm) Max
30V	18A	6 @ V _{GS} = 10V ,I _D =18A
		10 @ V _{GS} = 4.5V,I _D =15A

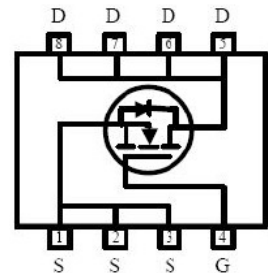
◆ **Features**

1. Advanced Trench Process Technology.
2. High Density Cell Design for Ultra Low On-Resistance.
3. Lead free product is acquired.
4. Surface mount Package
5. RoHS Compliant.



SOP-8

Pin 1 / 2 / 3: Source
Pin 4: Gate
Pin 5 / 6 / 7 / 8: Drain



◆ **Ordering Information**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		4	1/2/3	5/6/7/8	
CM4430-PR-L	CM4430-PR-G	SOP-8	G	S	D	Tape Reel
CM4430-PR-L (1)Package Type (2)Packing Type (3)Lead Free			(1) P: SOP-8 (2) R: Tape Reel (3) G: Halogen Free; L: Lead Free			

◆ **Absolute Maximum Ratings** ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current (Continuous) ^a	18	A
I_{DM}	Drain Current (Pulsed) ^b	80	A
P_D	Total Power Dissipation @ $T_A=25^{\circ}\text{C}$	3	W
T_j, T_{stg}	Operating Junction and Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient (PCB mounted) ^c	62.5	$^{\circ}\text{C/W}$

a:Fused current that based on wire numbers and diameter

b:Repetitive Rating: Pulse width limited by the maximum junction temperature

c:1-in² 2oz Cu PCB board

◆ **Electrical Characteristics** ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
• Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V	-	-	1	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
• On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1.3	–	3	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =18A	-	-	6	mΩ
		V _{GS} =4.5V, I _D =15A	-	-	10	
• Dynamic Characteristics ^d						
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	-	2586	-	pF
C _{oss}	Output Capacitance		-	385.5	-	
C _{rss}	Reverse Transfer Capacitance		-	298.8	-	
• Switching Characteristics ^d						
Q _g	Total Gate Charge	V _{DS} =15V, I _D =17A, V _{GS} =4.5V	-	22.5	-	nC
Q _{gs}	Gate-Source Charge		-	9.16	-	
Q _{gd}	Gate-Drain Charge		-	8.44	-	
t _{d(on)}	Turn-on Delay Time	V _{DD} =15V, I _D =1A, V _{GS} =10V, R _G =6Ω	-	22.04	-	nS
t _r	Turn-on Rise Time		-	14.12	-	
t _{d(off)}	Turn-off Delay Time		-	60.32	-	
t _f	Turn-off Fall Time		-	15.04	-	
• Drain-Source Diode Characteristics						
I _S	Maximum Diode Forward Current		-	-	4.5	A
V _{SD}	Drain-Source Diode Forward Voltage	V _{GS} =0V, I _S =1A	-	-	1	V

Note: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycles $\leq 2\%$

d: Guaranteed by design: not subject to production testing

◆ Characteristics Curve

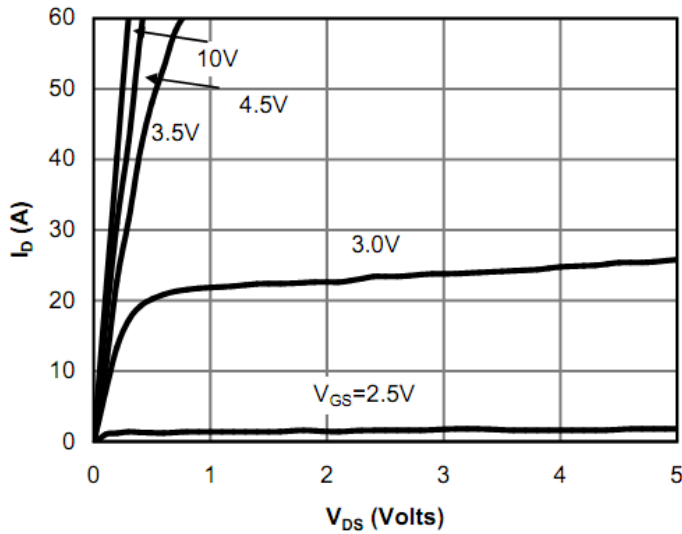


Fig 1: On-Region Characteristics

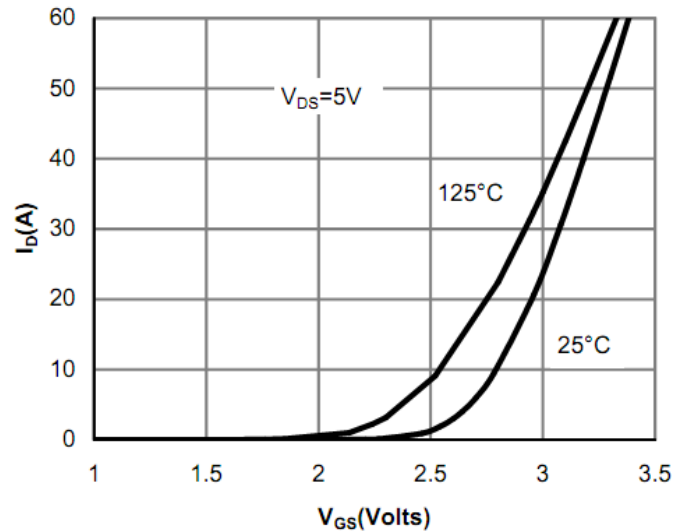


Figure 2: Transfer Characteristics

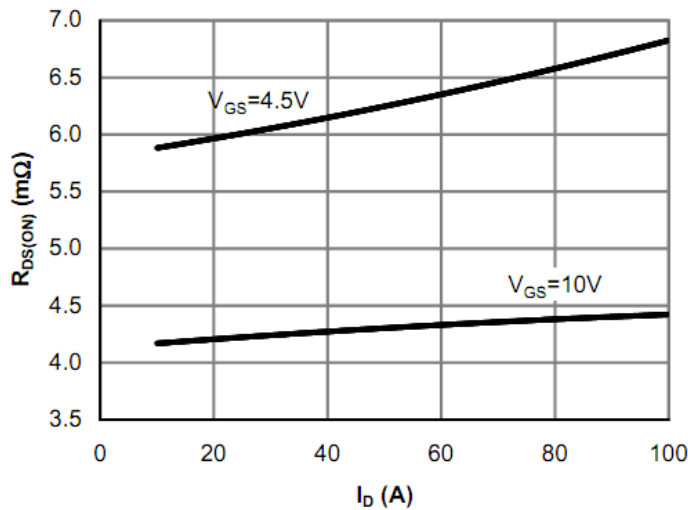


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

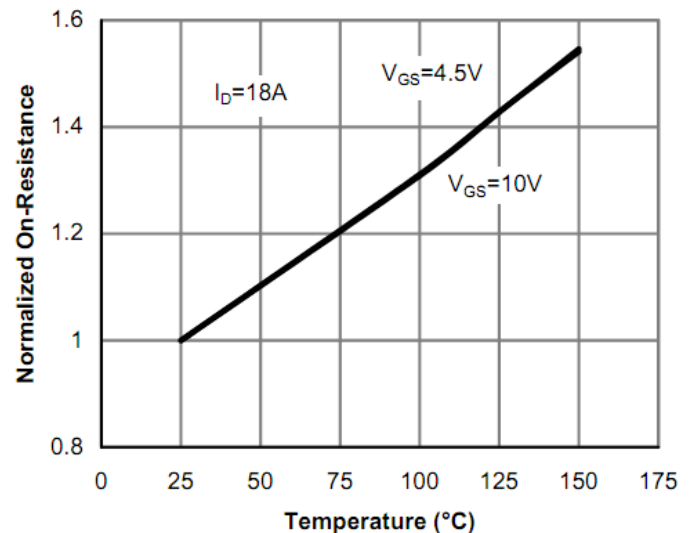


Figure 4: On-Resistance vs. Junction Temperature

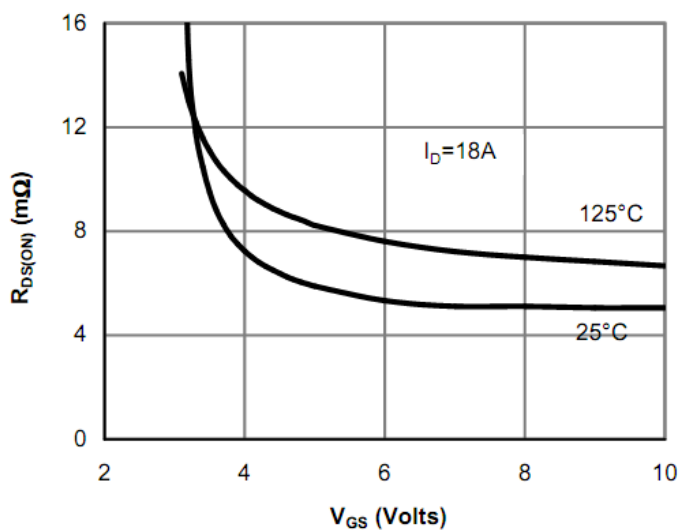


Figure 5: On-Resistance vs. Gate-Source Voltage

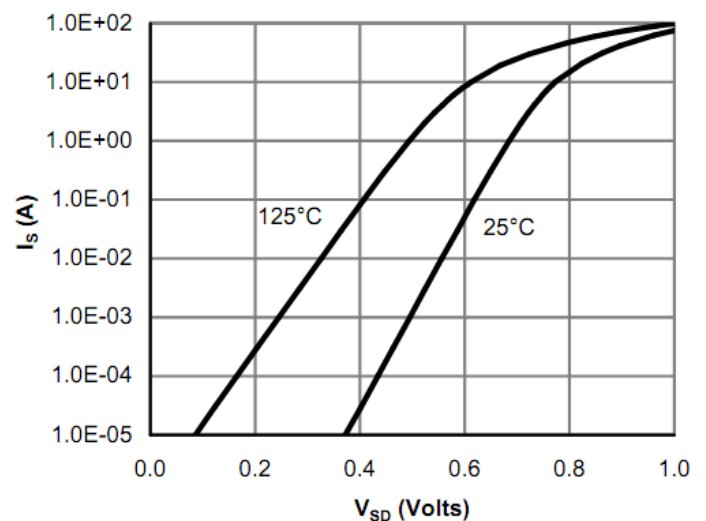


Figure 6: Body-Diode Characteristics

◆ Characteristics Curve

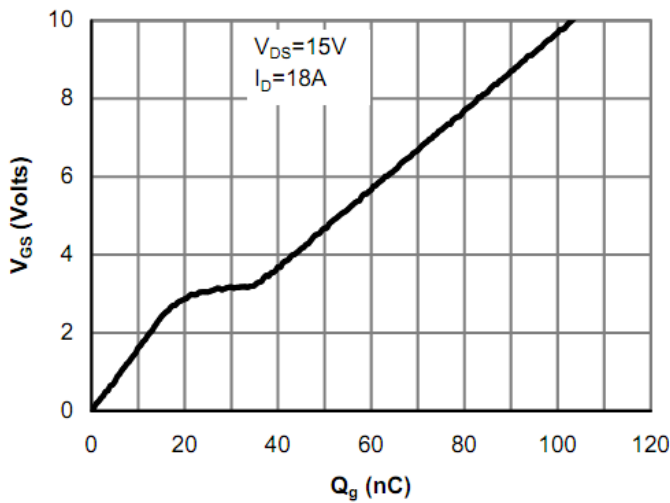


Figure 7: Gate-Charge Characteristics

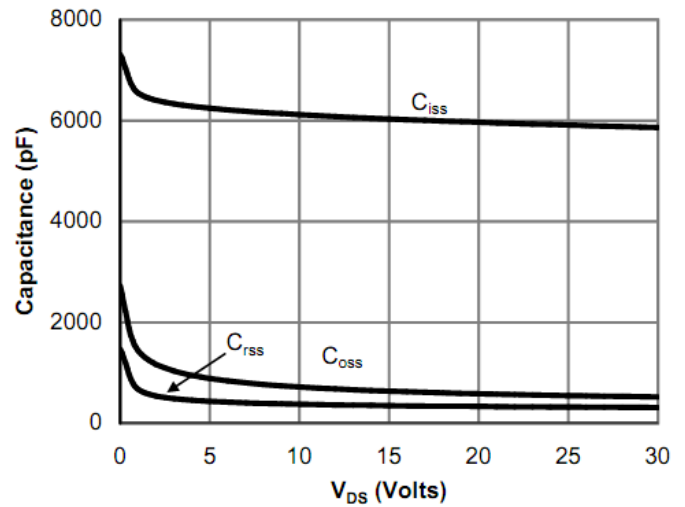


Figure 8: Capacitance Characteristics

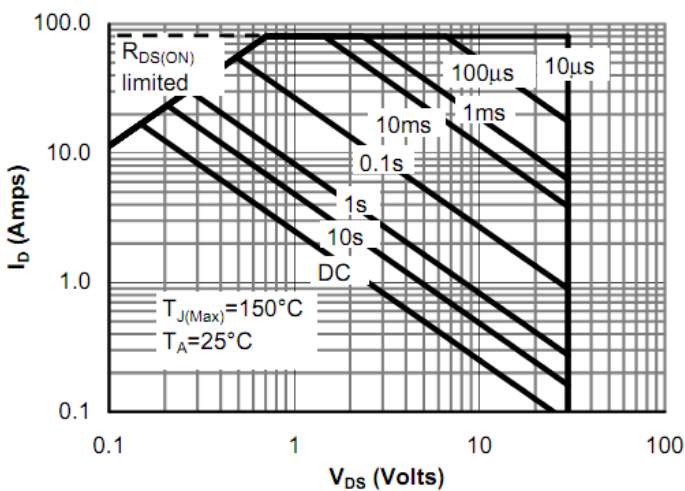


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

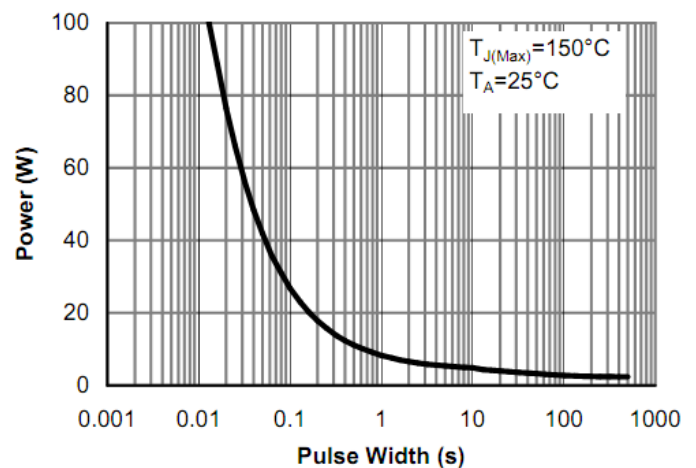


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

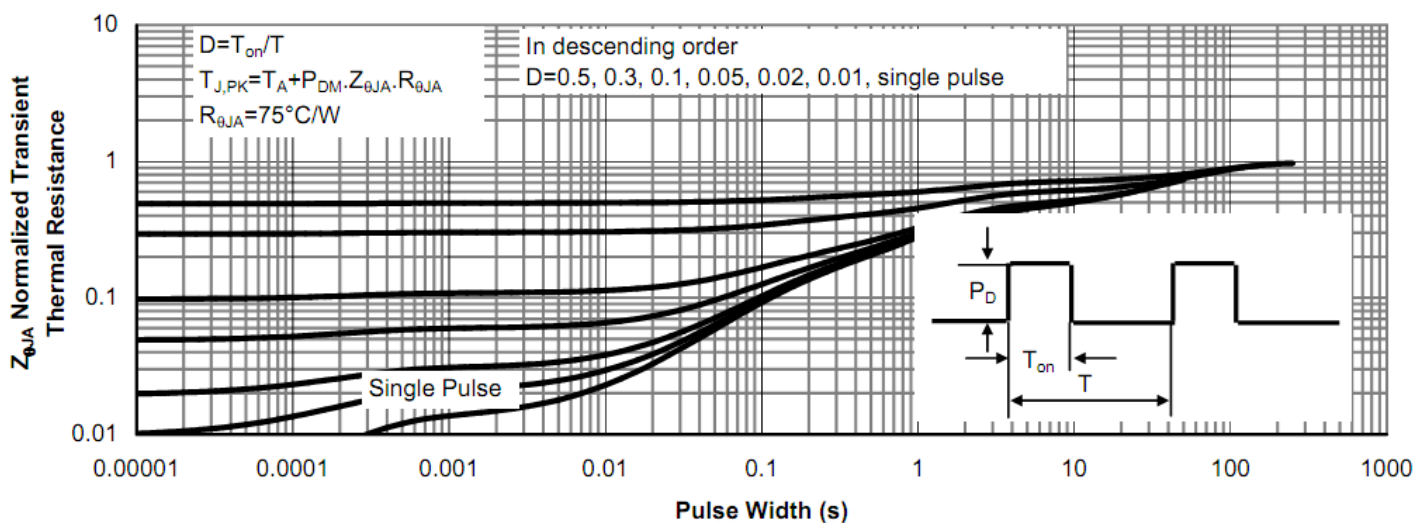
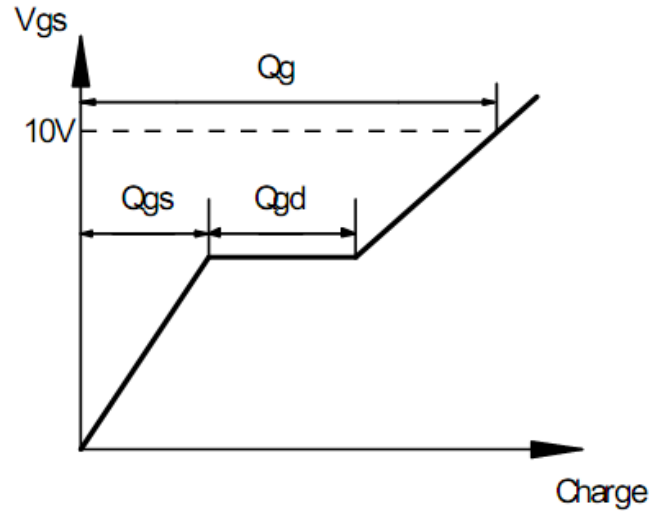
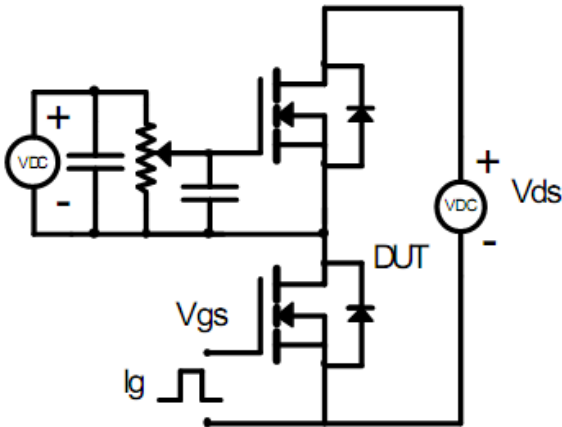


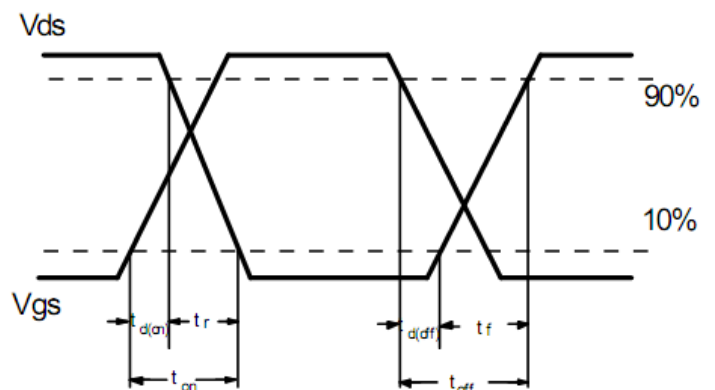
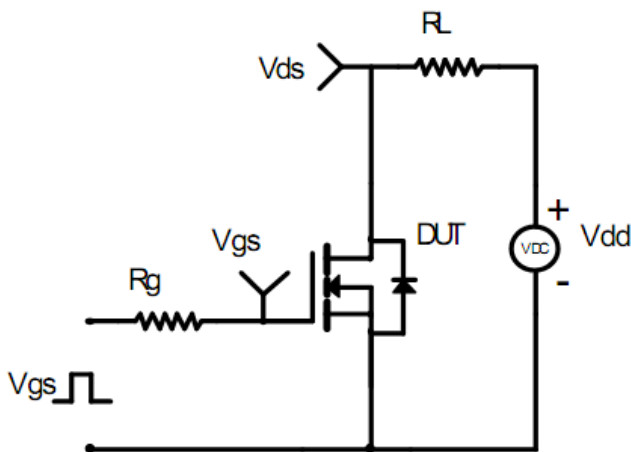
Figure 11: Normalized Maximum Transient Thermal Impedance

◆ Characteristics Curve

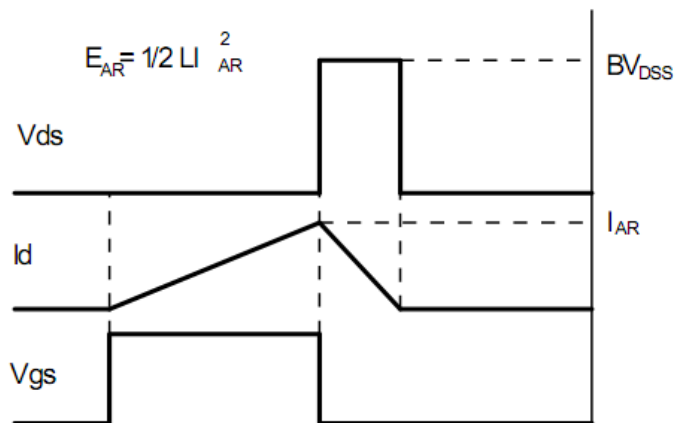
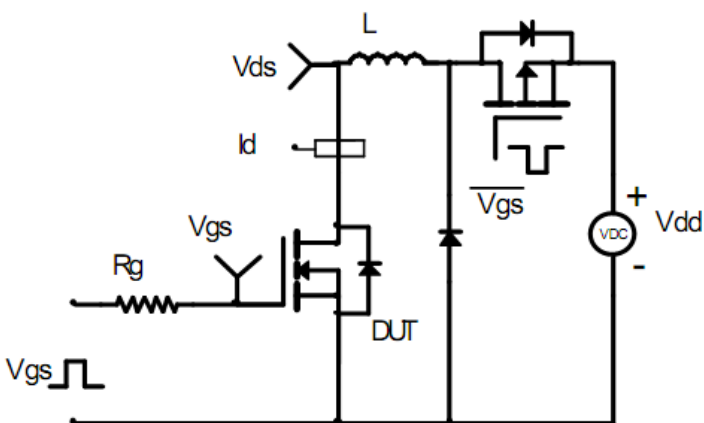
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



◆ Characteristics Curve

Diode Recovery Test Circuit & Waveforms

