30V P-Ch Power MOSFET

V_{DS}		-30	V
$R_{DS(on),typ}$	V_{GS}=-10V	17.5	mΩ
$R_{DS(on),typ}$	V_{GS}=-4.5V	26	mΩ
I_D (Sillicon Limited)			

Part Number	Package	Marking
HTM200P03	DFN3*3	TM200P03

Absolute Maximum Ratings at T_j=25 (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_A=25	-18	A
Drain to Source Voltage	V_{DS}			
Gate to Source Voltage	V_{GS}			
Pulsed Drain Current	I_{DM}			
Avalanche Energy, Single Pulse	E_{AS}			

Parameter		Max
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	
	$R_{\theta JCT}$	

Electrical Characteristics at T_j=25 (unless otherwise specified)

Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=-250μA	-1.0	-1.50	-3.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=-24V, T_j=25	-	-	-1	μA
		V_{GS}=0V, V_{DS}=-20V, T_j=125	-	-	-10	
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±25V, V_{DS}=0V	-	-	±100	nA
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-10A	-	17.5	20	mΩ
		V_{GS}=-4.5V, I_D=-7A	-	26	35	
Transconductance	g_{fs}	V_{DS}=-5V, I_D=-10A	-	24	-	S
Gate Resistance	R_G	V_{GS}=15mV, V_{DS} =0V, f=1MHz	-	4.5	-	Ω

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, f=1MHz	-	1407	-	pF
Output Capacitance	C_{oss}		-	208	-	
Reverse Transfer Capacitance	C_{rss}		-	164	-	
Total Gate Charge	Q_g (10V)	V_{DD}=-15V, I_D=-10A, V_{GS}=-10V	-	20.3	-	nC
	Q_g (4.5V)		-	10	-	
Gate to Source Charge	Q_{gs}		-	3.2	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	4.9	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=-15V, I_D=-1A, V_{GS}=-10V, R_G=2.7Ω,	-	10	-	ns
Rise time	t_r		-	8	-	
Turn off Delay Time	$t_{d(off)}$		-	25	-	
Fall Time	t_f		-	6	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=-3.5A	-		-1.2	V
Reverse Recovery Time	t_{rr}	I_F=-3.5A, dI_F/dt=100A/μs	-	32	-	ns
Reverse Recovery Charge	Q_{rr}		-	26	-	nC

Fig 1. Typical Output Characteristics

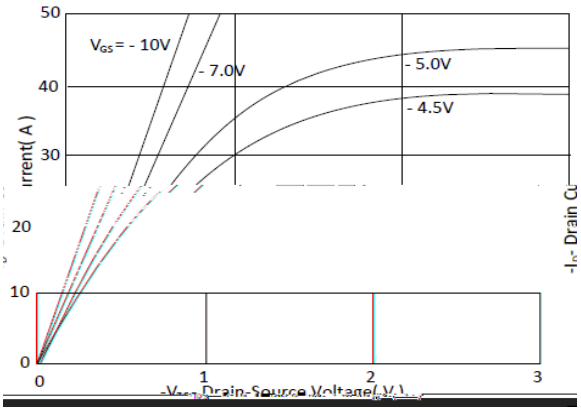


Figure 2. On-Resistance vs. Gate-Source Voltage

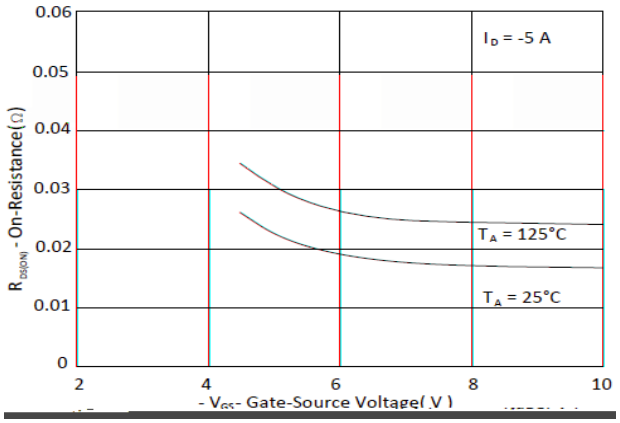


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

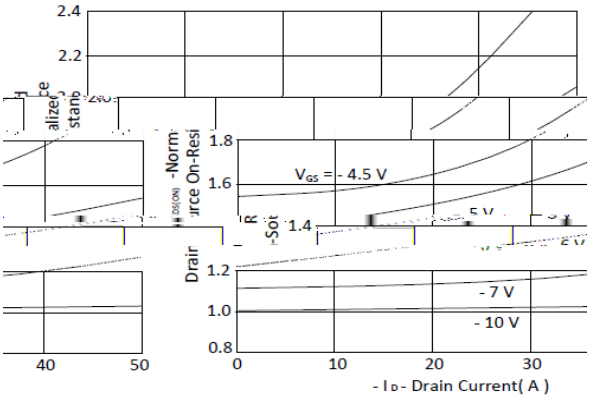


Figure 4. Normalized On-Resistance vs. Junction Temperature

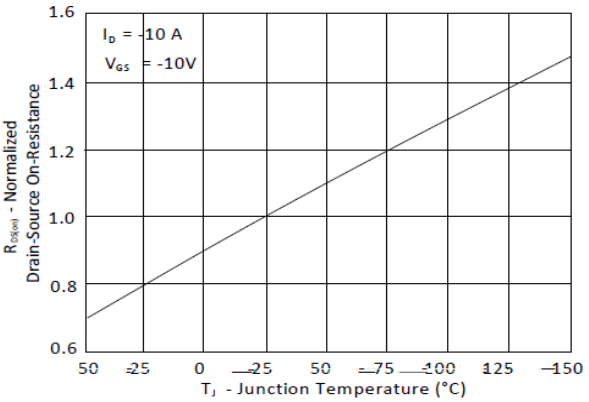


Figure 5. Typical Transfer Characteristics

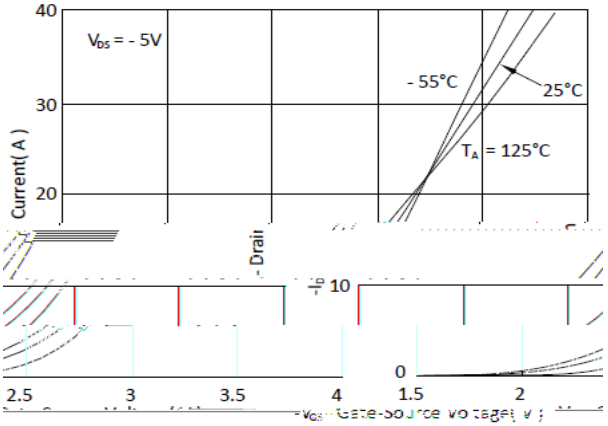


Figure 6. Typical Source-Drain Diode Forward Voltage

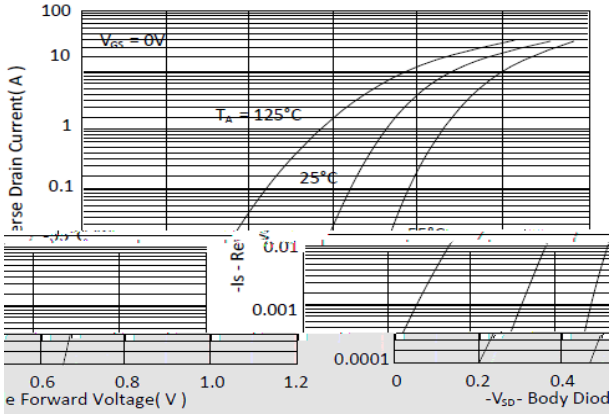


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

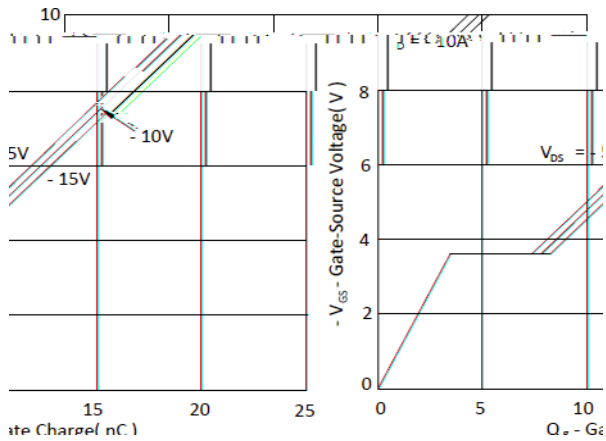


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

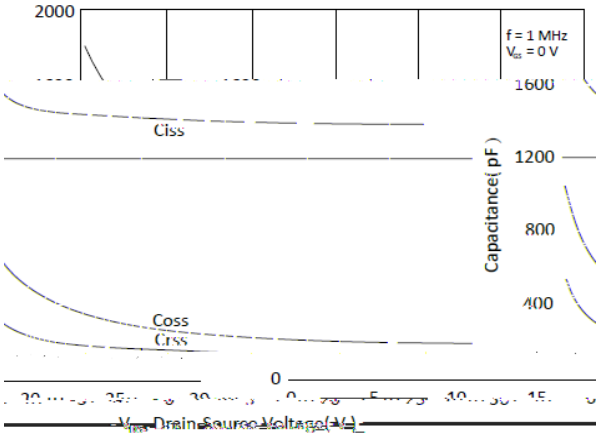


Figure 9. Maximum Safe Operating Area

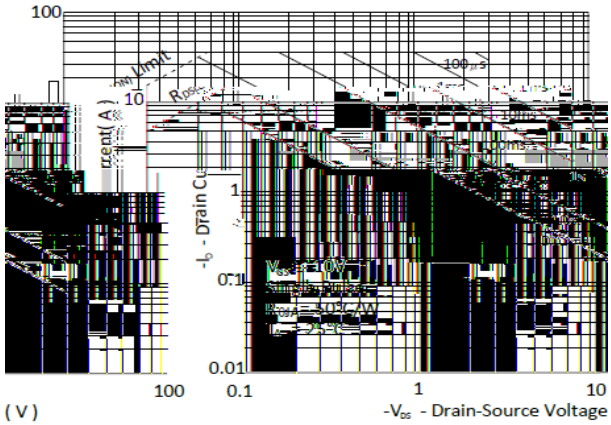


Figure 10. Single Pulse Maximum Power Dissipation

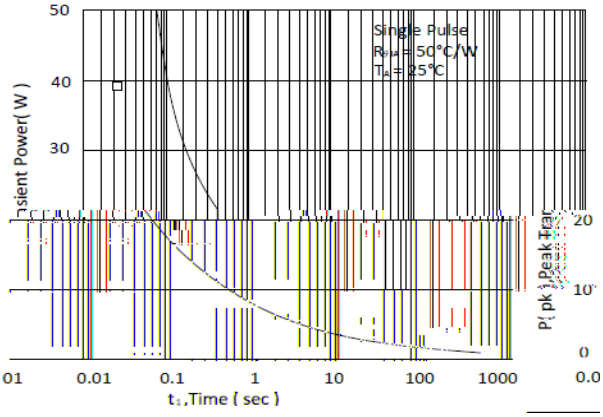
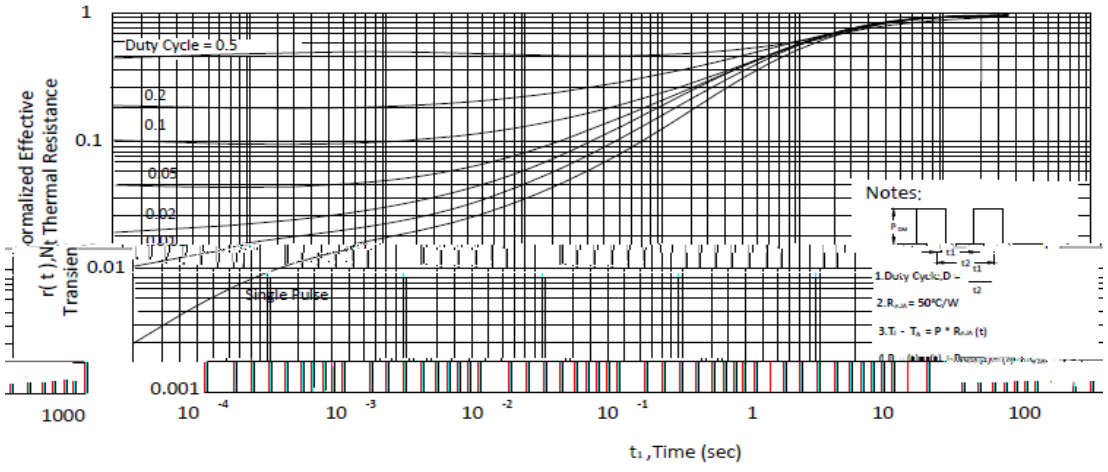
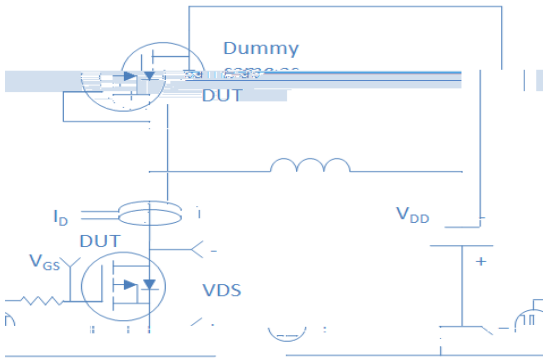
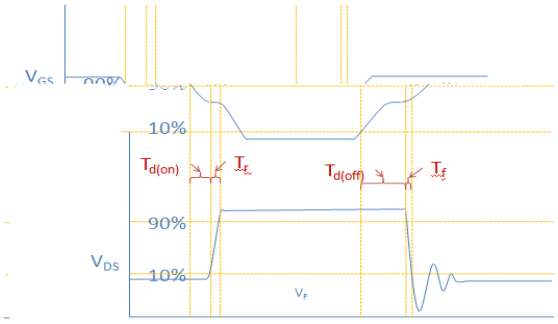


Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient

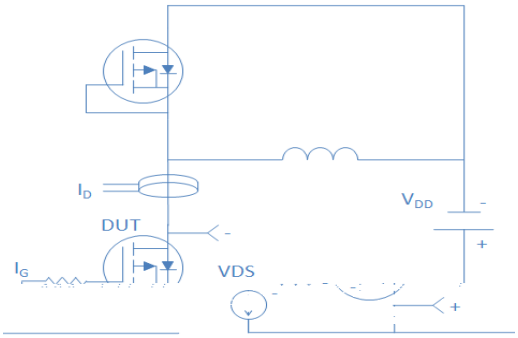


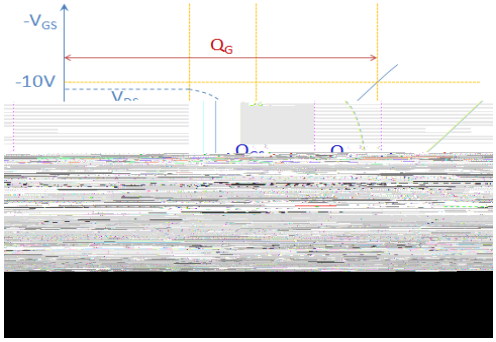
Inductive switching Test



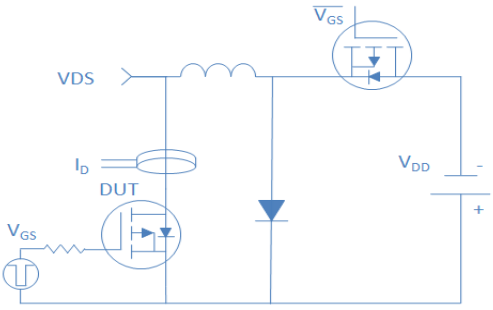


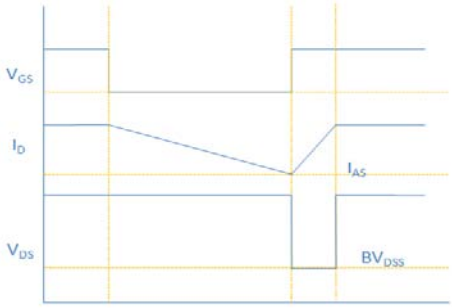
Gate Charge Test



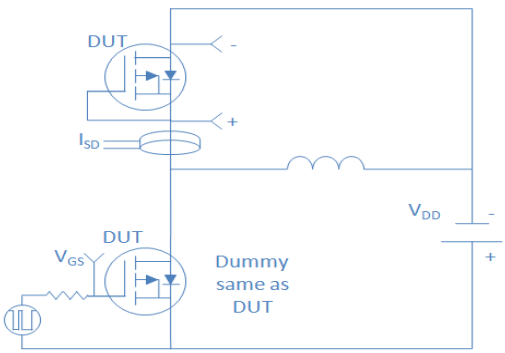


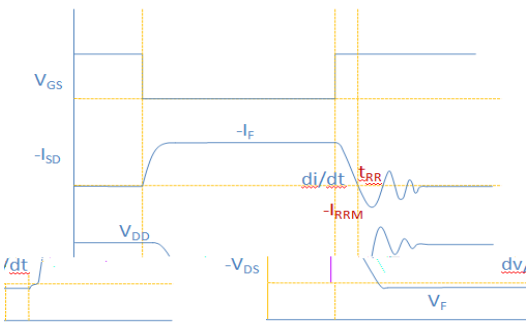
Uclamped Inductive Switching (UIS) Test





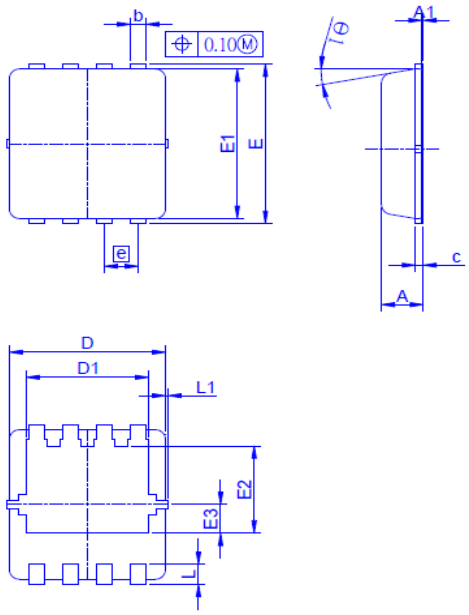
Diode Recovery Test





Package Outline

DFN3*3, 8leads



Dimension in mm

Dimension	A	A1	b	c	D	D1	E	E1	E2	E3	e	L	L1	θ1
Min.	0.70	0	0.24	0.10	2.95	2.25	3.15	2.95	1.65			0.30		0°
Typ.	0.75													
Max.	0.80		0.30		3.05		3.35	3.05	1.75			0.40		12°