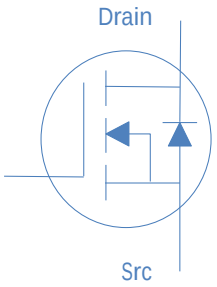
$I_{D\ (Sillicon\ Limited)}$	55	A



Part Number	Package	Marking
HTD070N04	TO-252	TD070N04

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C=25	55	A
		T_C=100	40	
		-	40	V
		-	±20	V
		-	150	A
		L=0.1mH, T_C=25	45	mJ
Power Dissipation	P_D	T_C=25	50	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to175	

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	R_{JA}	75	/W
Thermal Resistance Junction-Case	R_{JC}	3	/W

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=250 A	40	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250 A	1.5	1.9	3.2	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=32V, T_j=25	-	-	1	A
		V_{GS}=0V, V_{DS}=30V, T_j=125	-	-	25	
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=24A	-	6	7	m
		V_{GS}=5V, I_D=16A	-	8	11	
Transconductance	g_{fs}	V_{DS}=5V, I_D=24A	-	28	-	S
Gate Resistance	R_G	V_{GS}=15mV, V_{DS} =0V, f=1MHz	-	2.0	-	

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=20V, f=1MHz	-	1915	-	pF
Output Capacitance	C_{oss}		-	260	-	
Reverse Transfer Capacitance	C_{rss}		-	208	-	
Total Gate Charge	Q_g(10V)	V_{DD}=20V, I_D=24A, V_{GS}=10V	-	50	-	nC
Gate to Source Charge	Q_{gs}		-	6	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	13	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=20V, I_D=1A, V_{GS}=10V, R_G=6 ,	-	9	-	ns
Rise time	t_r		-	20	-	
Turn off Delay Time	$t_{d(off)}$		-	30	-	
Fall Time	t_f		-	12	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=55A	-		1.3	V
Reverse Recovery Time	t_{rr}	I_F=25A, dI_F/dt=100A/ s	-	75	-	ns
Reverse Recovery Charge	Q_{rr}		-	50	-	nC

Fig 1. Typical Output Characteristics

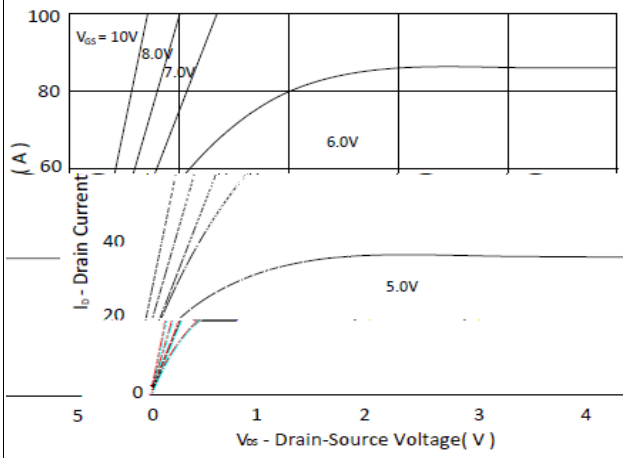


Figure 2. On-Resistance vs. Gate-Source Voltage

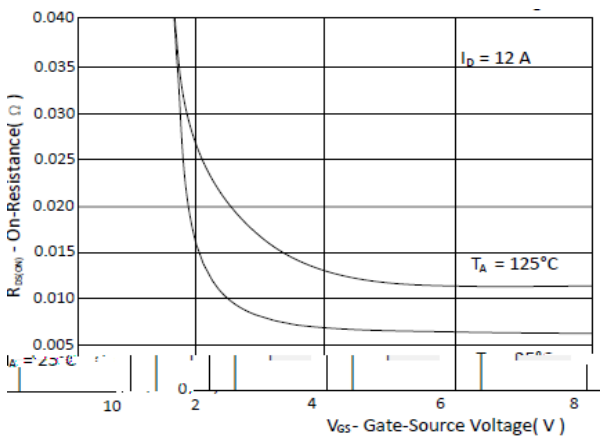


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

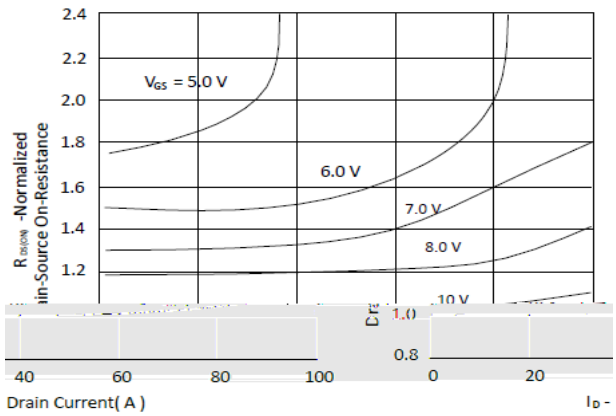


Figure 4. Normalized On-Resistance vs. Junction Temperature

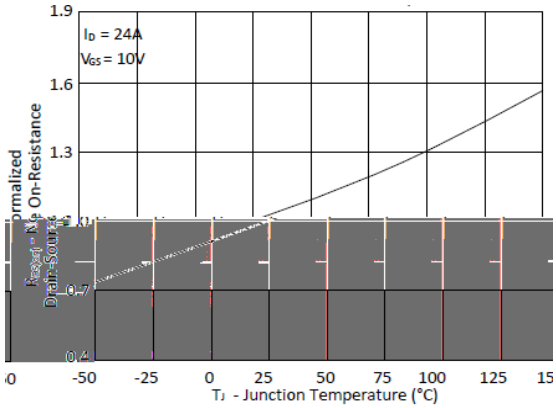


Figure 5. Typical Transfer Characteristics

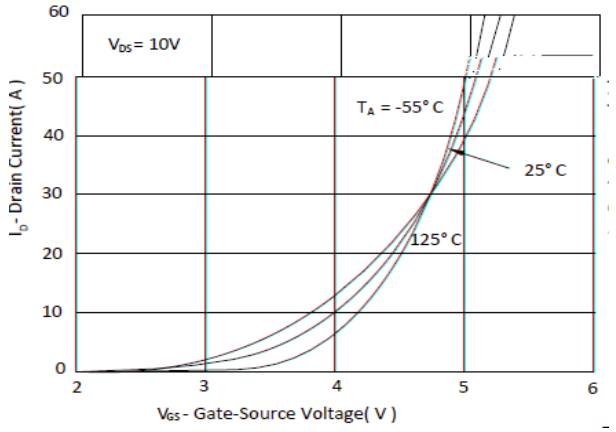


Figure 6. Typical Source-Drain Diode Forward Voltage

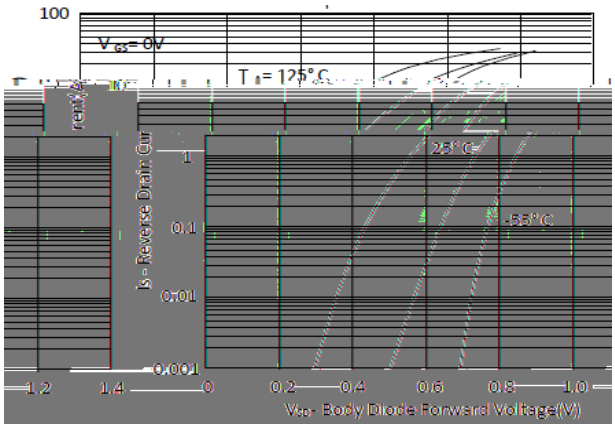


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

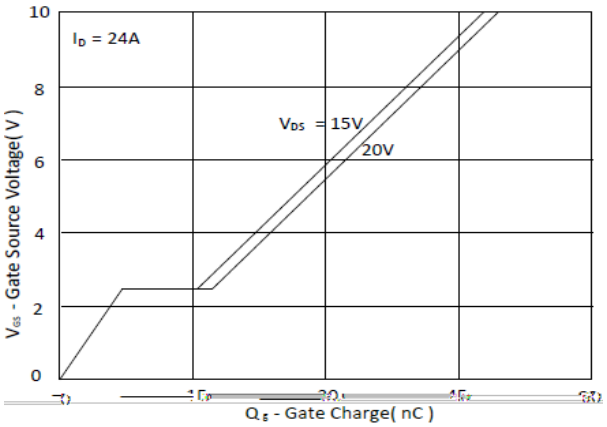


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

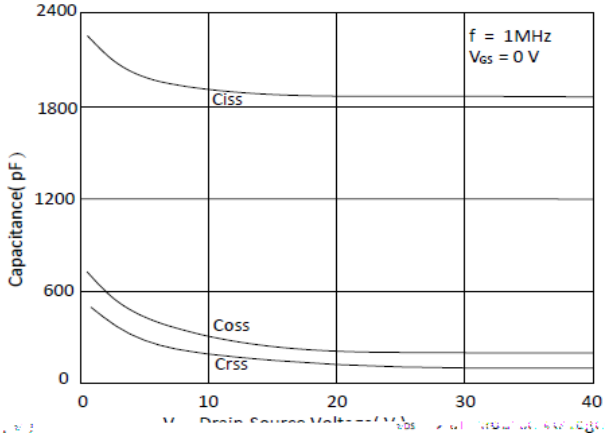


Figure 9. Maximum Safe Operating Area

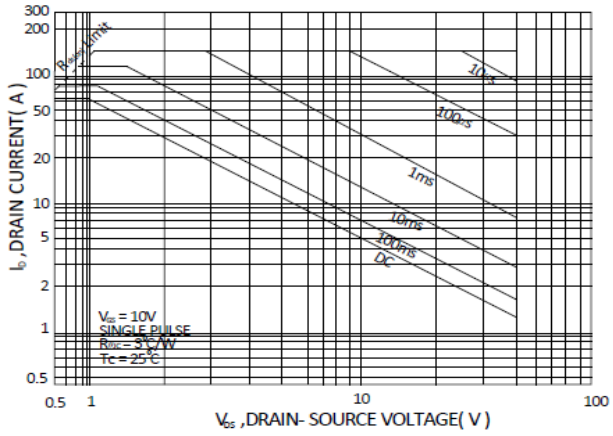


Figure 10. Single Pulse Maximum Power Dissipation

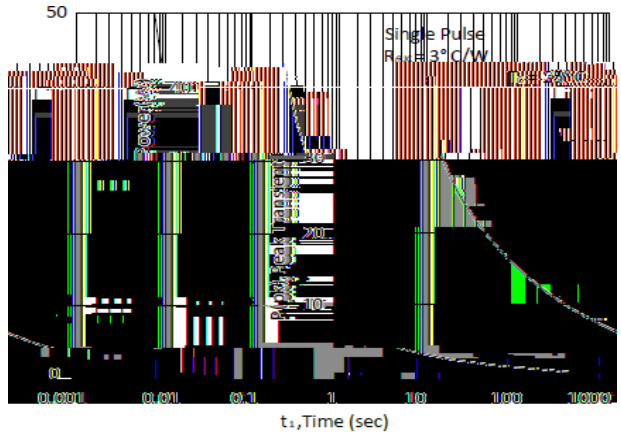
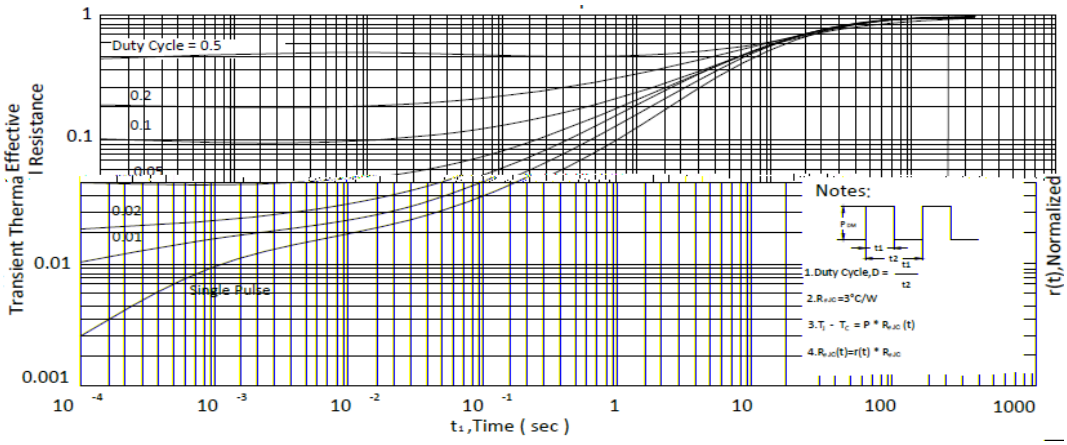
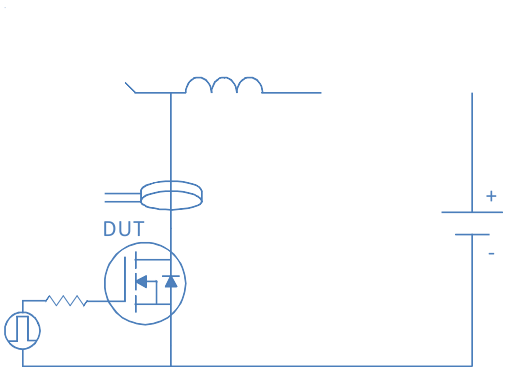


Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient



Inductive switching Test	

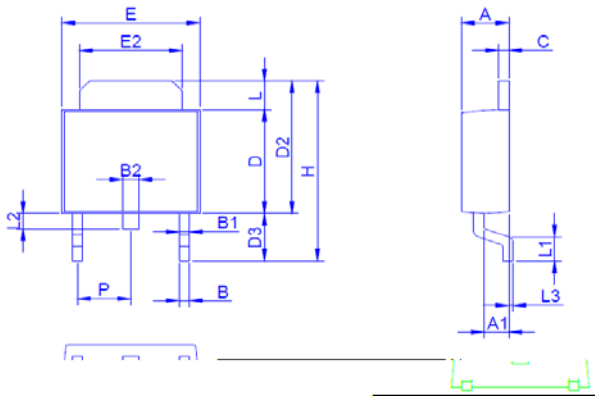
Gate Charge Test	

Uclamped Inductive Switching (UIS) Test	
	

Diode Recovery Test	

Package Outline

TO-252, 3leads



Dimension	A	A1	B	B1	B2	C	D	D2	D3	E	E2	H	L	L1	L2	L3	P
Min.	2.10	0.95	0.30	0.40	0.60	0.40	5.30	6.70	2.20	6.40	4.80	9.20	0.89	0.90	0.50	0.00	2.10
Max.	2.50	1.30	0.85	0.94	1.00	0.60	6.20	7.30	3.00	6.70	5.45	10.15	1.70	1.65	1.10	0.30	2.50