HTD760P10T P-1

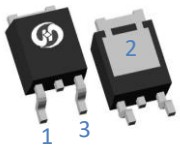
100V P-Ch Power MOSFET

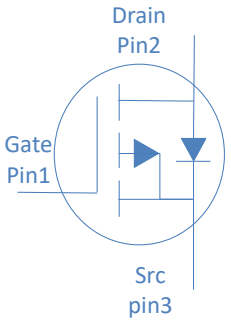
V_{DS}		-100	V
$R_{DS(on),typ}$	V_{GS}=10V	63	mΩ
$R_{DS(on),typ}$	V_{GS}=4.5V	72	mΩ
$I_{D\ (Sillicon\ Limited)}$		-30	A

Feature
- ◇ High Speed Power Switching, Logic Level
- ◇ Enhanced Avalanche Ruggedness
- ◇ 100% UIS Tested, 100% Rg Tested
- ◇ Lead Free

Application
- ◇ Hard Switching and High Speed Circuit
- ◇ DC/DC in Telecoms and Inductrial

TO-252





Part Number	Package	Marking
HTD760P10T	TO-252	TD760P10T

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

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current (Silicon Limited)	I_D	T_C=25℃	-30	A
Drain to Source Voltage	V_{DS}	-	-100	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	-120	A
Power Dissipation	P_D	T_A=25℃	125.0	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to150	℃

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	50	℃/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	1	℃/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=-250μA	-100	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=-250μA	-1.0	-	-3.0	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=-100V, T_j=25℃	-	-	-25	μA
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=-15A	-	63	76	mΩ
		V_{GS}=-4.5V, I_D=-8A	-	72	92	

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-25V, f=1MHz	-	2550	-	pF
Output Capacitance	C_{oss}		-	345	-	
Reverse Transfer Capacitance	C_{rss}		-	70	-	
Total Gate Charge	Q_g	V_{DD}=-80V, I_D=-18A, V_{GS}=-10V	-	78	101	nC
Gate to Source Charge	Q_{gs}		-	8	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	20	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=-50V, I_D=-18A, V_{GS}=-10V, R_G=3.3Ω,	-	16	32	ns
Rise time	t_r		-	7	14	
Turn off Delay Time	$t_{d(off)}$		-	120	240	
Fall Time	t_f		-	25	50	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=-16A	-		-1.2	V

Fig 1. Typical Output Characteristics

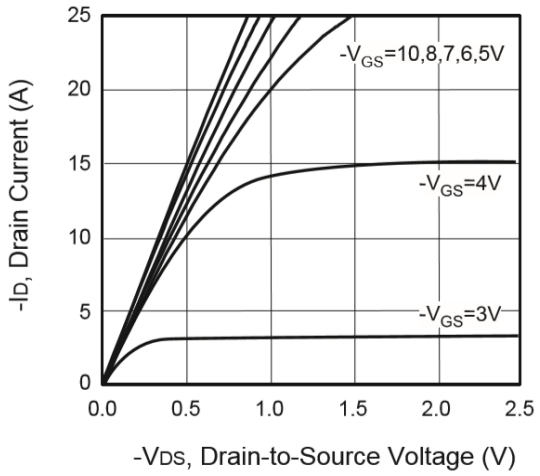


Figure 2. Normalized On-Resistance vs. Junction Temperature

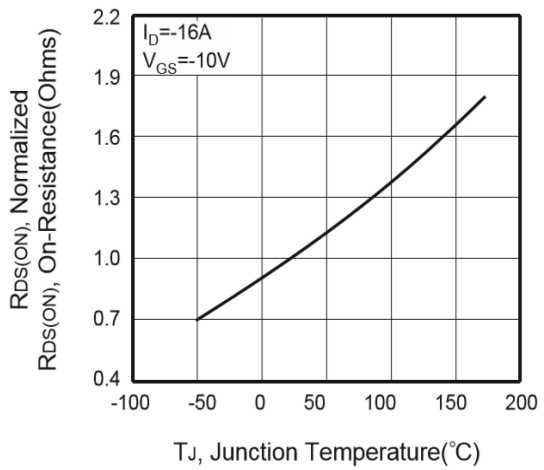


Figure 3. Typical Transfer Characteristics

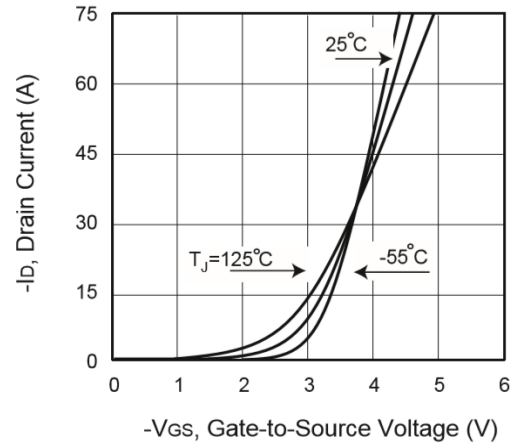


Figure 4. Typical Source-Drain Diode Forward Voltage

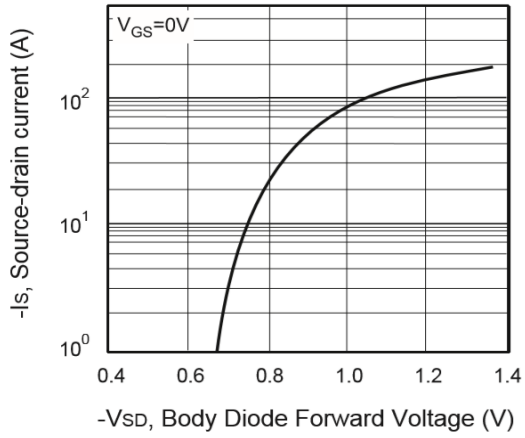


Figure 5. Typical Gate-Charge vs. Gate-to-Source Voltage

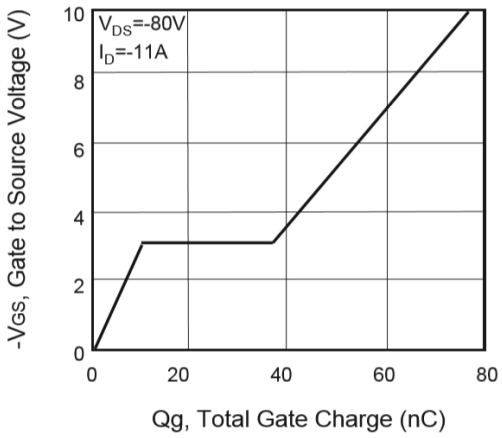


Figure 6. Typical Capacitance vs. Drain-to-Source Voltage

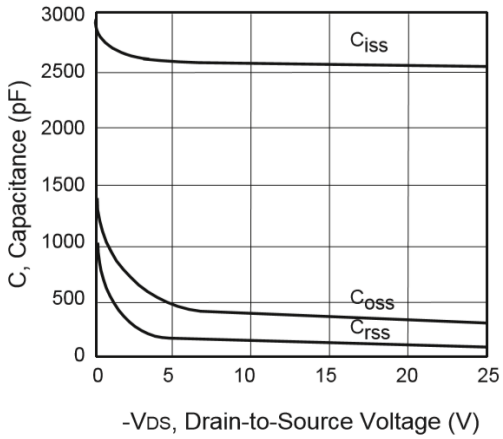


Figure 7. Normalized Gate-Source Threshold Voltage vs temperature

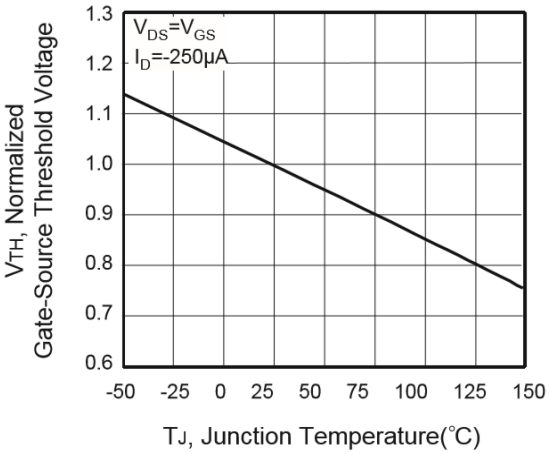


Figure 8. Maximum Safe Operating Area

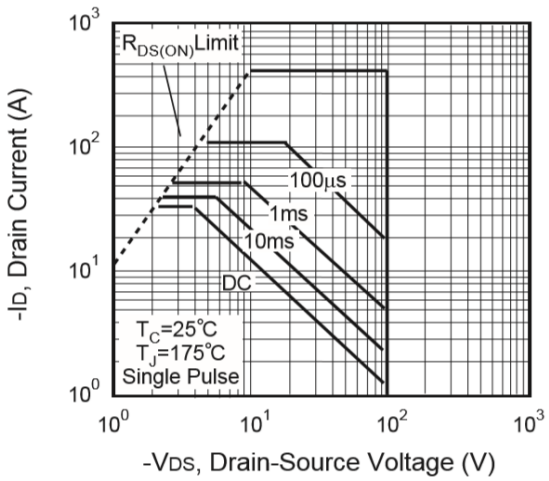
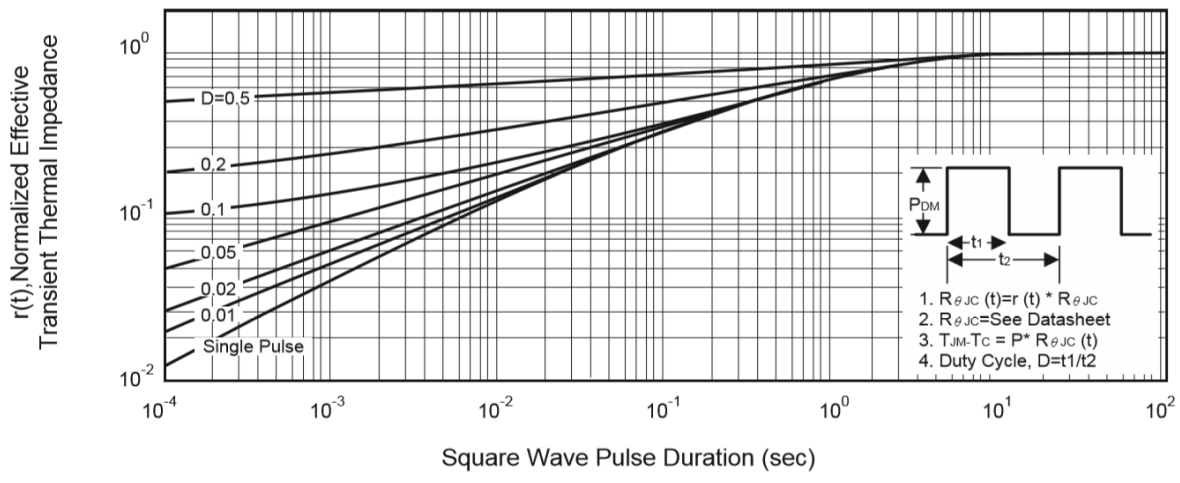
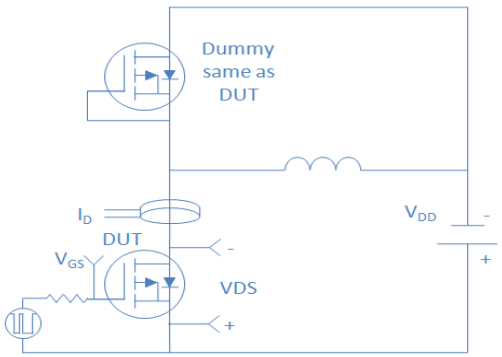
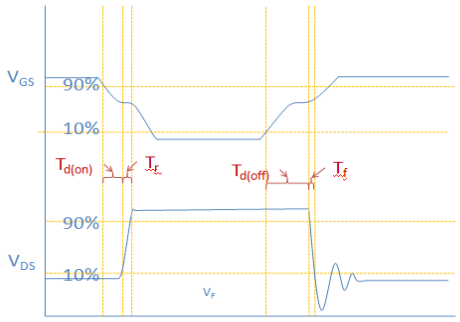


Figure 9. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient

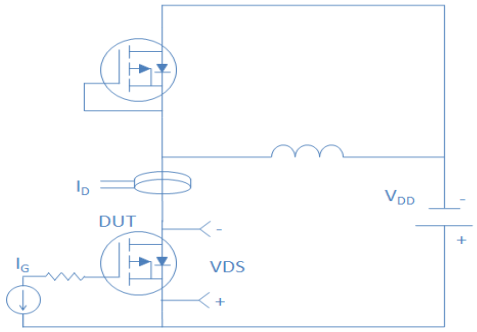


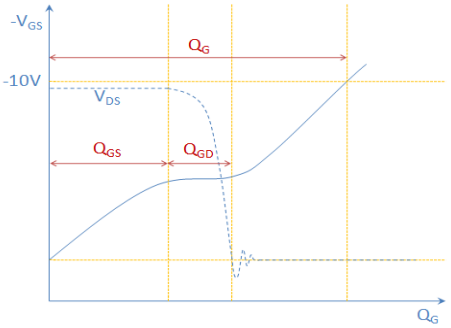
Inductive switching Test



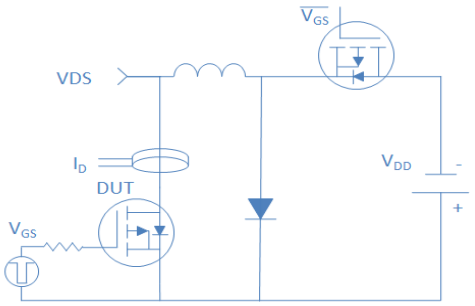


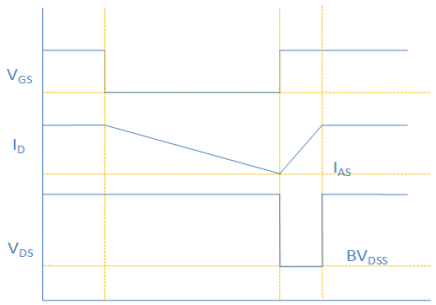
Gate Charge Test



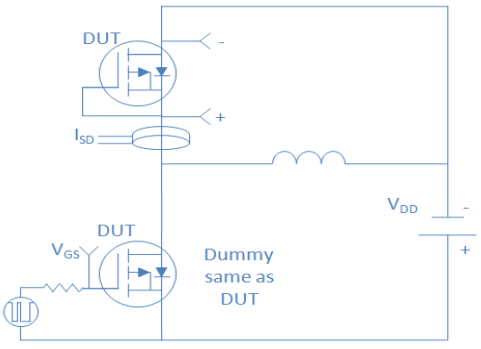


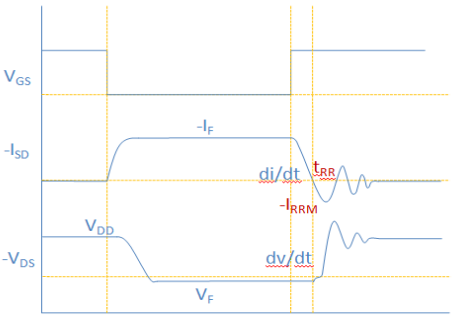
Uclamped Inductive Switching (UIS) Test



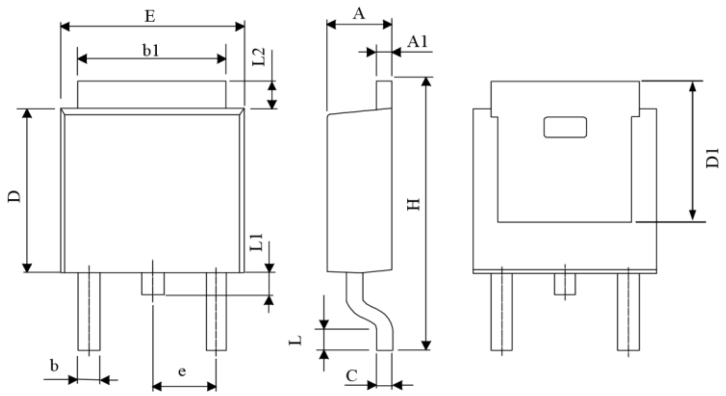


Diode Recovery Test





TO-252, 3 leads



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.20	2.40	0.087	0.094
A1	0.45	0.89	0.018	0.035
b	0.50	0.90	0.019	0.035
b1	4.95	5.59	0.195	0.220
C	0.40	0.61	0.016	0.024
D	5.40	6.63	0.213	0.261
E	6.05	7.10	0.238	0.280
e	1.98	2.59	0.078	0.102
H	8.80	10.6	0.346	0.417
L	0.25	--	0.010	--
L1	0.50	1.20	0.020	0.047
L2	0.70	1.78	0.028	0.070
D1	5.00	5.40	0.197	0.213