



Product Summary

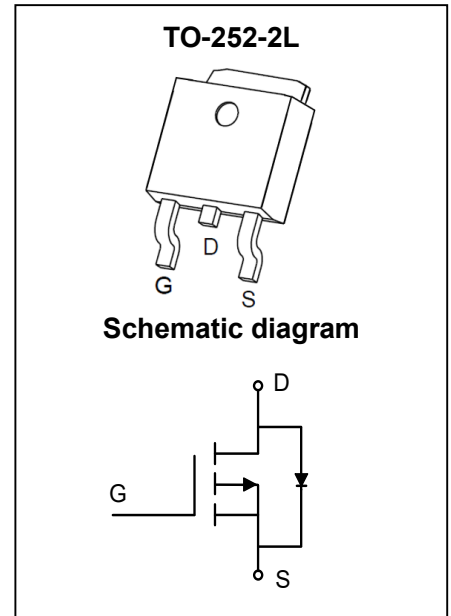
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-150V	104mΩ@-10V	-25A
	108mΩ@-4.5V	

Feature

- Split Gate Trench Technology
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

Application

- Power Switching Application
- Motor Driving



Package Marking and Ordering Information

Part Number	Package	Marking	Packing	Reel Size	Tape Width	Qty
GPT950P15LTF	TO-252-2L	T950P15L	Reel & Tape	330mm	16mm	2500pcs

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit	
Drain - Source Voltage	V_{DS}	-150	V	
Gate - Source Voltage	V_{GS}	±20	V	
Continuous Drain Current ¹	$T_C = 25^\circ\text{C}$	I_D	-25	A
	$T_C = 100^\circ\text{C}$	I_D	-17	A
Pulsed Drain Current ²	I_{DM}	-100	A	
Single Pulsed Avalanche Current ³	I_{AS}	-35	A	
Single Pulsed Avalanche Energy ³	E_{AS}	306	mJ	
Power Dissipation ⁵	$T_C = 25^\circ\text{C}$	P_D	147	W
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	42	$^\circ\text{C/W}$	
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.85	$^\circ\text{C/W}$	
Junction Temperature	T_J	150	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$	

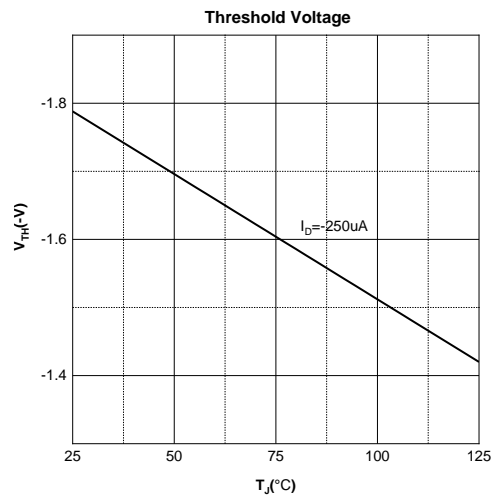
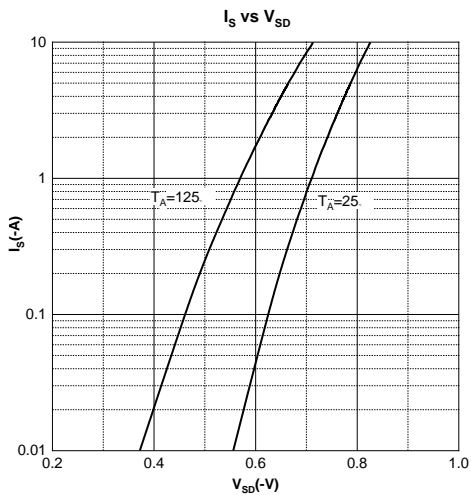
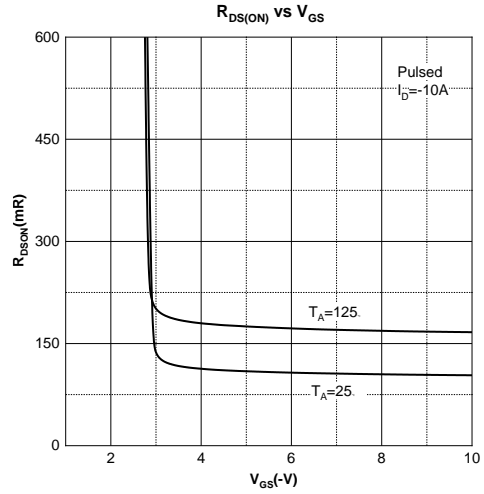
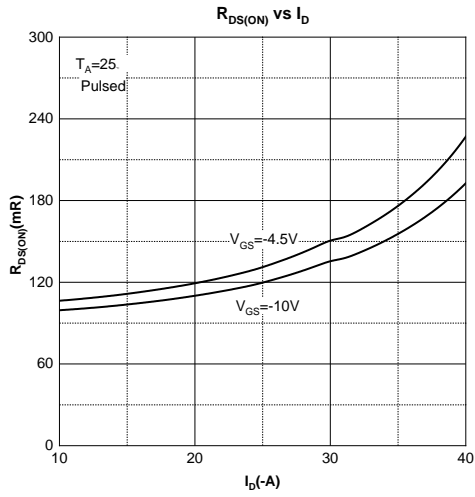
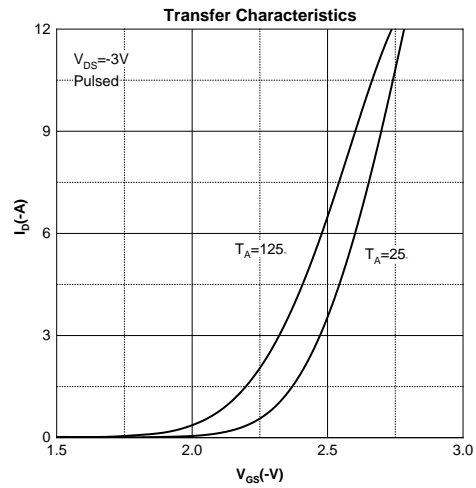
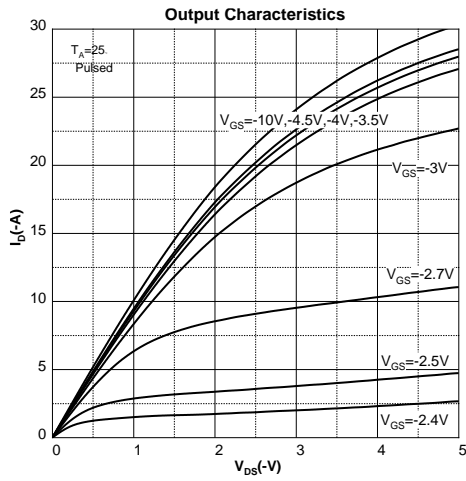
MOSFET ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

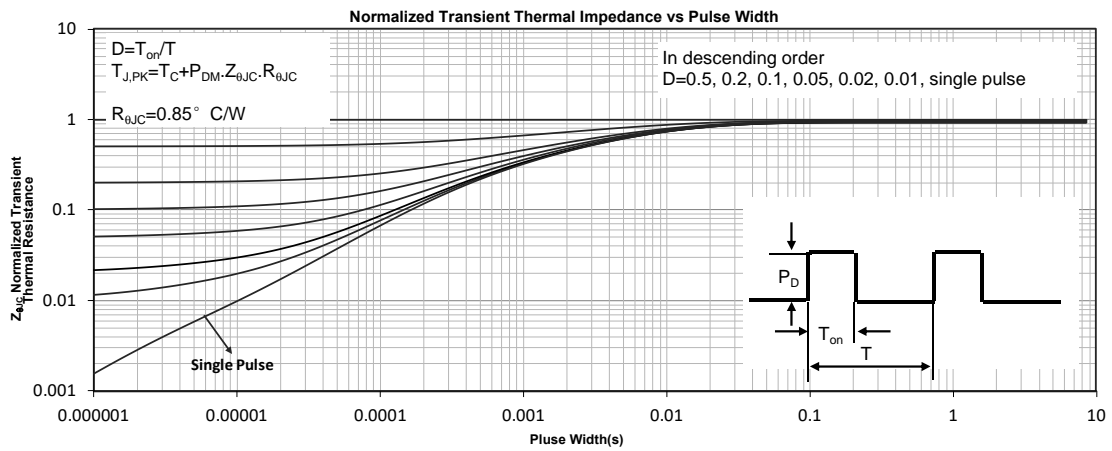
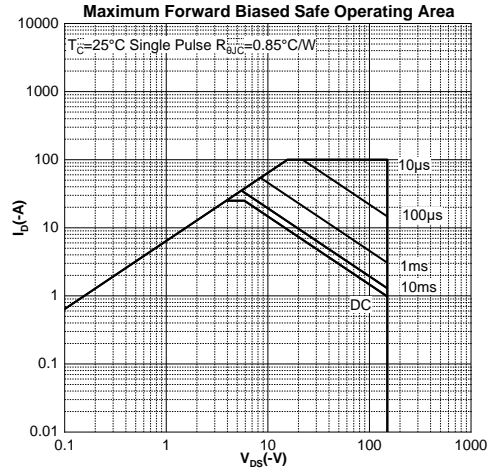
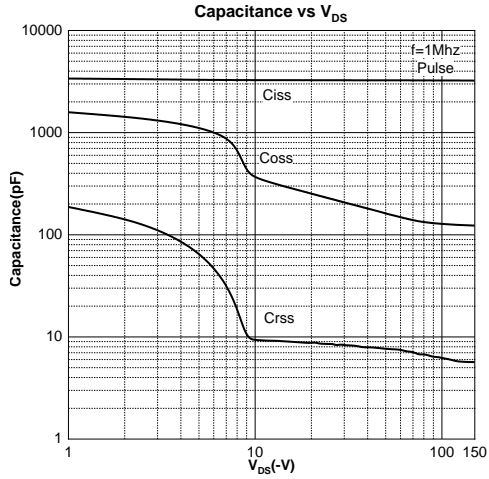
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	-150			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -150V, V_{GS} = 0V$			-1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics⁴						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.8	-3.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -15A$		104	135	m Ω
		$V_{GS} = -4.5V, I_D = -10A$		108	140	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -75V, V_{GS} = 0V, f = 1MHz$		3235		pF
Output Capacitance	C_{oss}			136		
Reverse Transfer Capacitance	C_{rss}			6.6		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		7.2		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -75V, V_{GS} = -10V, I_D = -10A$		46		nC
Gate-source Charge	Q_{gs}			7.0		
Gate-drain Charge	Q_{gd}			7.1		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -75V, V_{GS} = -10V, I_D = -10A,$ $R_G = 3\Omega$		11		ns
Turn-on Rise Time	t_r			45		
Turn-off Delay Time	$t_{d(off)}$			72		
Turn-off Fall Time	t_f			66		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V_{SD}	$V_{GS} = 0V, I_S = -10A$			1.2	V

Notes :

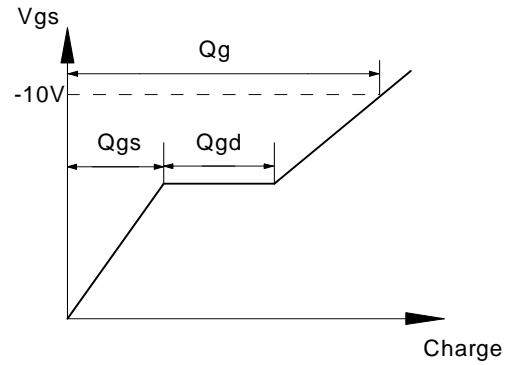
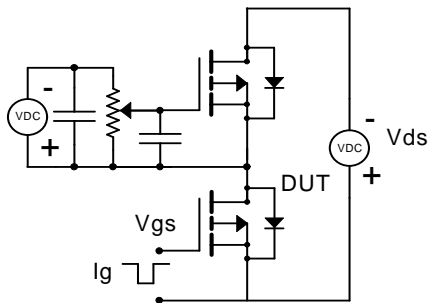
- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.EAS condition: $V_{DD} = -50V, V_{GS} = -10V, L = 0.5mH, R_G = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- 4.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 5.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.And device mounted on a large heatsink
- 6.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics

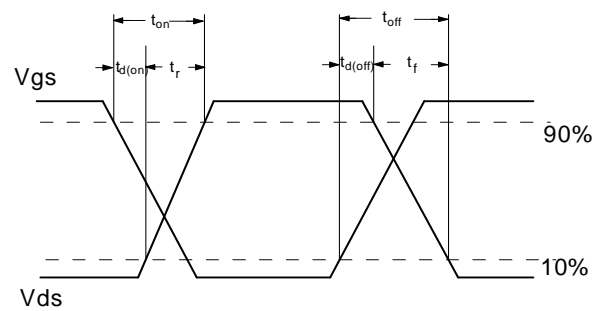
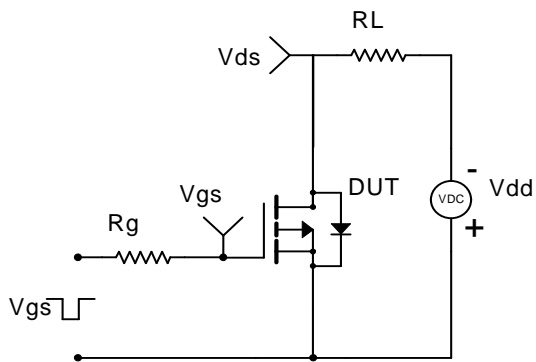




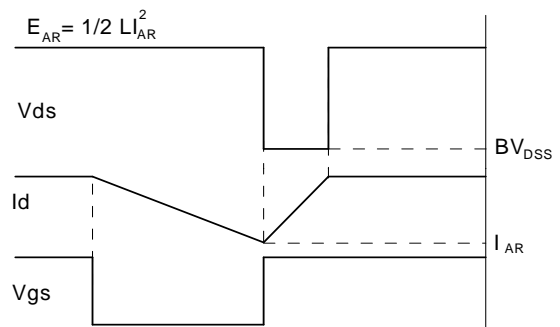
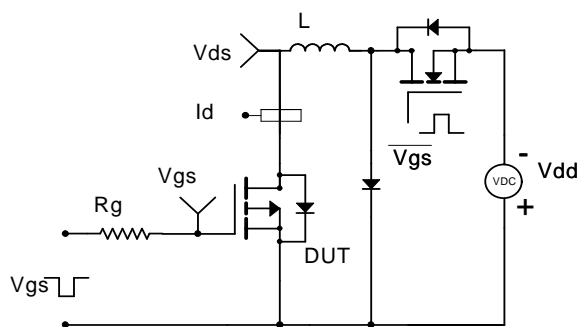
Gate Charge Test Circuit & Waveform



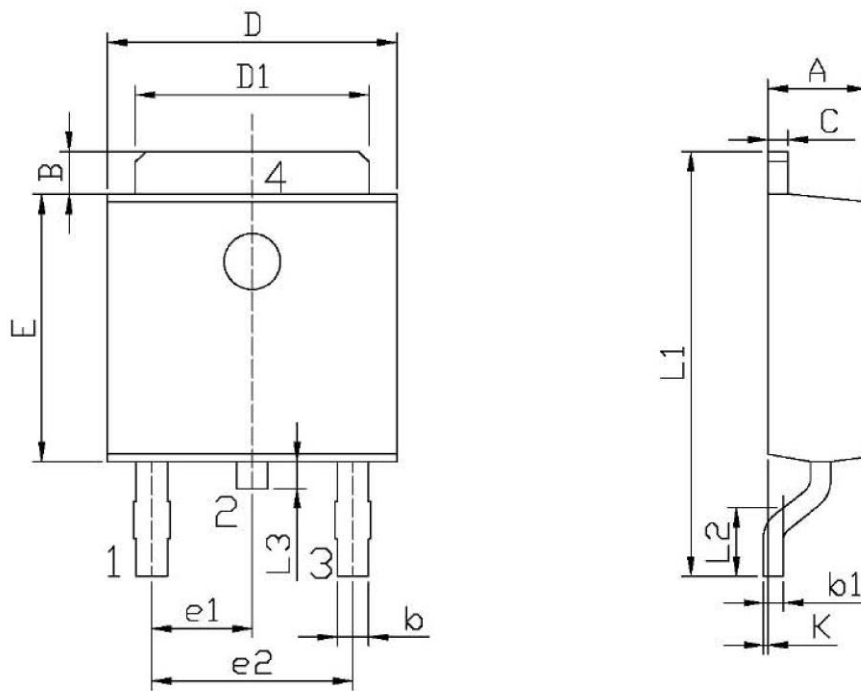
Resistive Switching Test Circuit & Waveform



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



TO-252-2L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
B	0.950	1.250	0.037	0.049
b	0.500	0.700	0.020	0.028
b1	0.450	0.550	0.018	0.022
C	0.450	0.550	0.018	0.022
D	6.450	6.750	0.254	0.266
D1	5.100	5.500	0.201	0.217
E	5.950	6.250	0.234	0.246
e1	2.240	2.340	0.088	0.092
e2	4.430	4.730	0.174	0.186
L1	9.450	9.950	0.372	0.392
L2	1.250	1.750	0.049	0.069
L3	0.600	0.900	0.024	0.035
K	0.000	0.100	0.000	0.004