
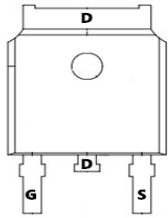
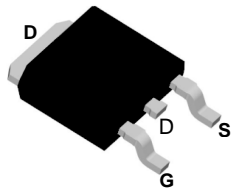
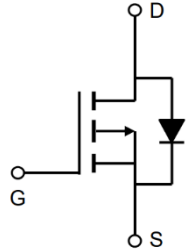


TM100P06D

P -Channel Enhancement Mosfet

<p>General Description</p> <ul style="list-style-type: none"> • Low $R_{DS(ON)}$ • RoHS and Halogen-Free Compliant <p>Applications</p> <ul style="list-style-type: none"> • Load switch • PWM 	<p>General Features</p> <p>$V_{DS} = -60V$ $I_D = -100A$</p> <p>$R_{DS(ON)} = 8.5m\Omega$ (typ.) @ $V_{GS} = -10V$</p> <p>100% UIS Tested 100% R_g Tested</p> 
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D:TO-252-3L

Marking: 100P06

Absolute Maximum Ratings (TC=25°C unless otherwise noted)				
Symbol	Parameter		Rating	Unit
Common Ratings				
V_{DSS}	Drain-Source Voltage		-60	V
V_{GSS}	Gate-Source Voltage		±20	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	
I_S	Diode Continuous Forward Current	$T_C = 25^\circ C$	-67	A
I_D	Continuous Drain Current	$T_C = 25^\circ C$	-100	A
		$T_C = 100^\circ C$	-75	
I_{DM}	Pulsed Drain Current	$T_C = 25^\circ C$	-420 ^a	
P_D	Maximum Power Dissipation	$T_C = 25^\circ C$	89.3	W
		$T_C = 100^\circ C$	35.7	
$R_{\theta JC}$	Thermal Resistance-Junction to Case	Steady state	1.4	°C/W
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	Steady state	50	°C/W
I_{AS}^b	Avalanche Current, Single pulse	L=0.5mH	-28	A
E_{AS}^b	Avalanche Energy, Single pulse	L=0.5mH	196	mJ

Note a : Pulse width limited by maximum junction temperature.

Note b : UIS tested and pulse width limited by maximum junction temperature (initial temperature $T_J = 25^\circ C$).

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P -Channel Enhancement Mosfet

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-48V, V _{GS} =0V	-	-	-1	μA
		T _J =85°C	-	-	-30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250μA	-1	-1.5	-2	V
I _{GSS}	Gate Leakage Current	V _{GS} =±25V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^c	Drain-Source On-state Resistance	V _{GS} =-10V, I _{DS} =-30A	-	8.5	10	mΩ
		V _{GS} =-4.5V, I _{DS} =-30A	-	11	14	mΩ
Diode Characteristics						
V _{SD} ^c	Diode Forward Voltage	I _{SD} =-15A, V _{GS} =0V	-	-0.8	-1.1	V
t _{rr}	Reverse Recovery Time	I _{SD} =-30A, dI _{SD} /dt=100A/μs	-	47	-	ns
Q _{rr}	Reverse Recovery Charge		-	72	-	nC
Dynamic Characteristics^d						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	2	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-30V, Frequency=1.0MHz	-	5800	-	pF
C _{oss}	Output Capacitance		-	350	-	
C _{rss}	Reverse Transfer Capacitance		-	185	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-30V, R _L =30Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	23	41	ns
t _r	Turn-on Rise Time		-	15	27	
t _{d(OFF)}	Turn-off Delay Time		-	114	205	
t _f	Turn-off Fall Time		-	47	85	
Gate Charge Characteristics^d						
Q _g	Total Gate Charge	V _{DS} =-30V, V _{GS} =-10V, I _{DS} =-30A	-	89	125	nC
Q _{gs}	Gate-Source Charge		-	21	-	
Q _{gd}	Gate-Drain Charge		-	24	-	

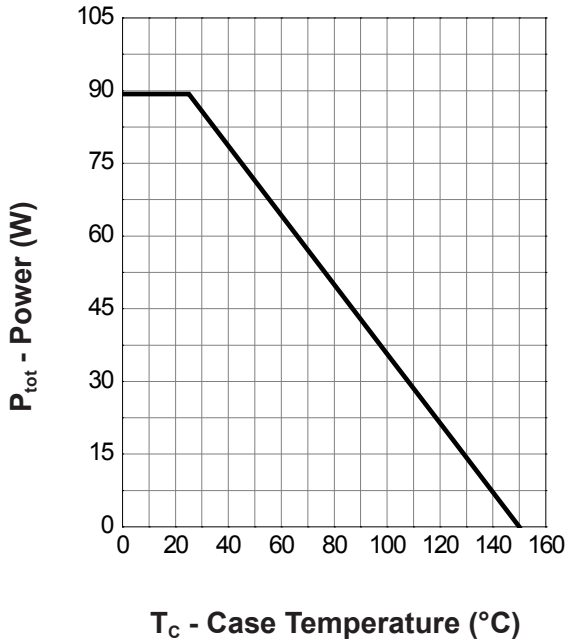
Note c : Pulse test ; pulse width≤300μs, duty cycle≤2%.

Note d : Guaranteed by design, not subject to production testing.

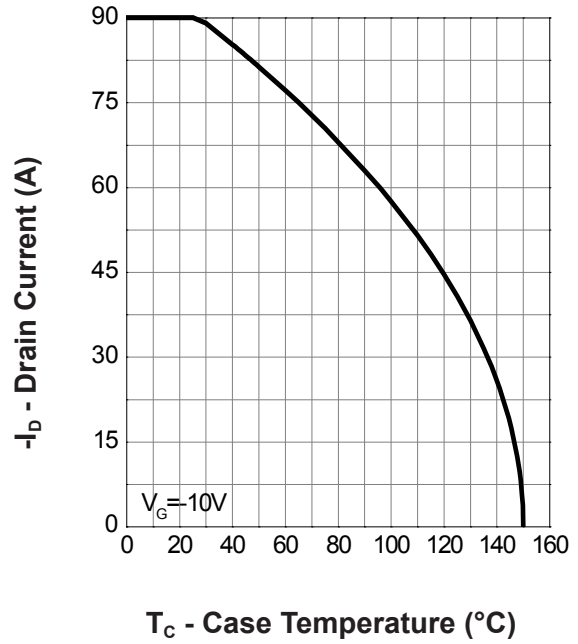


Typical Operating Characteristics

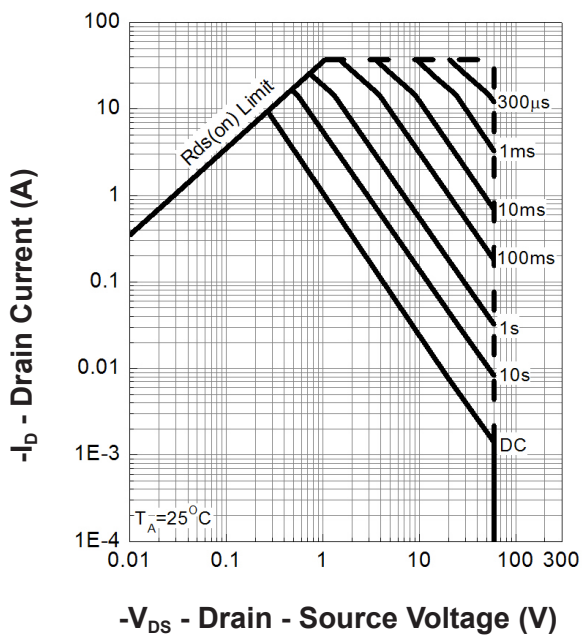
Power Dissipation



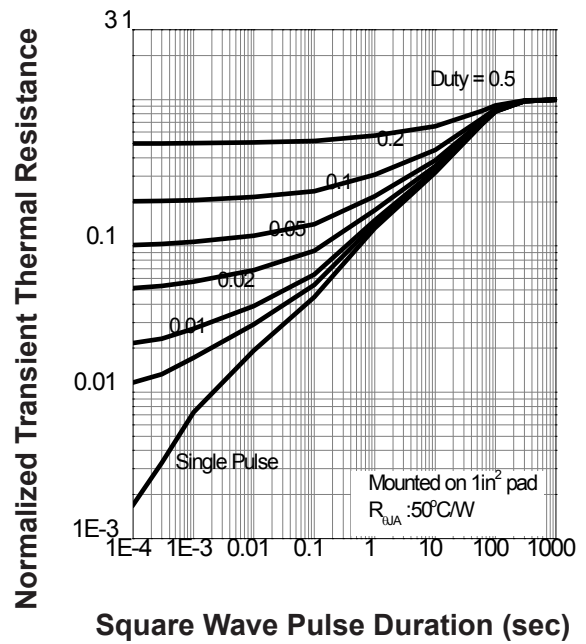
Drain Current



Safe Operation Area



Thermal Transient Impedance

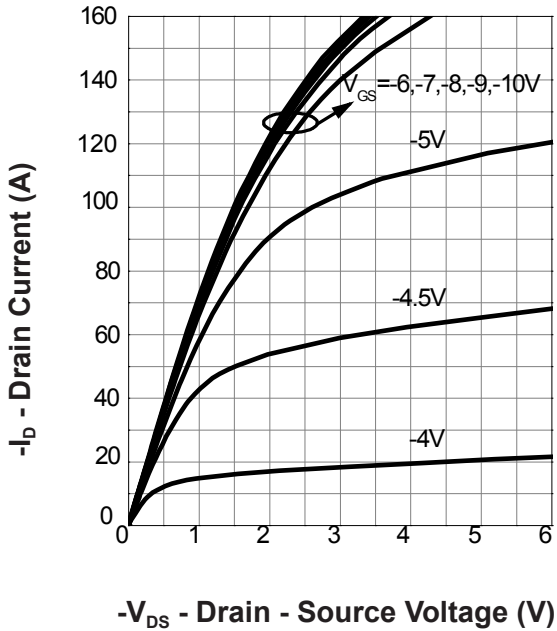




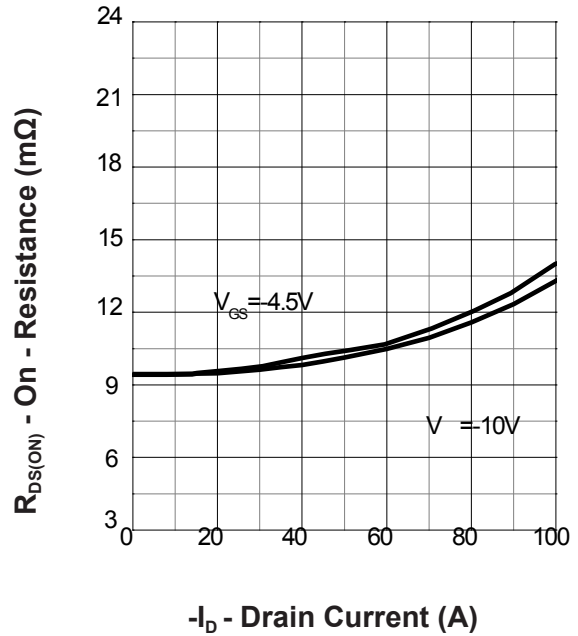
TM100P06D

P -Channel Enhancement Mosfet

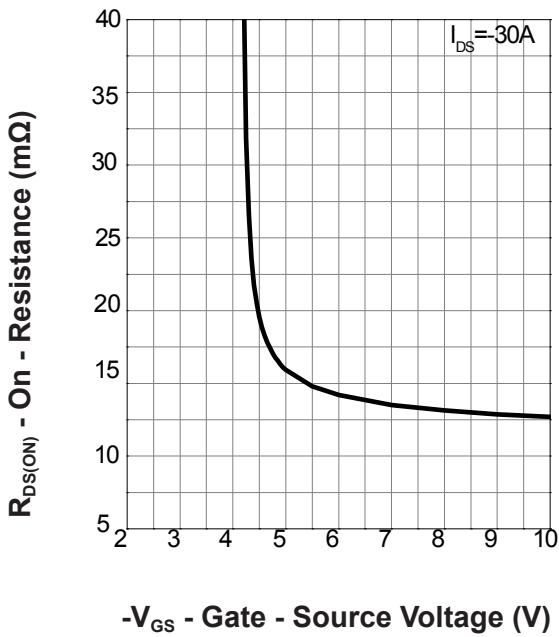
Output Characteristics



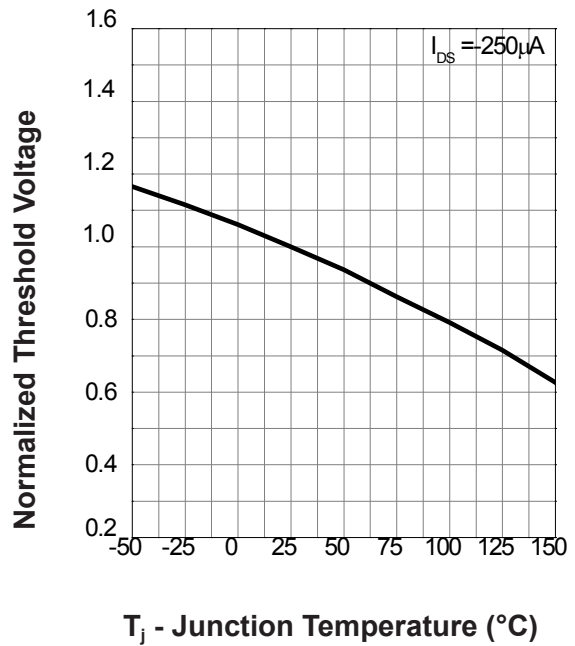
Drain-Source On Resistance



Gate-Source On Resistance



Gate Threshold Voltage

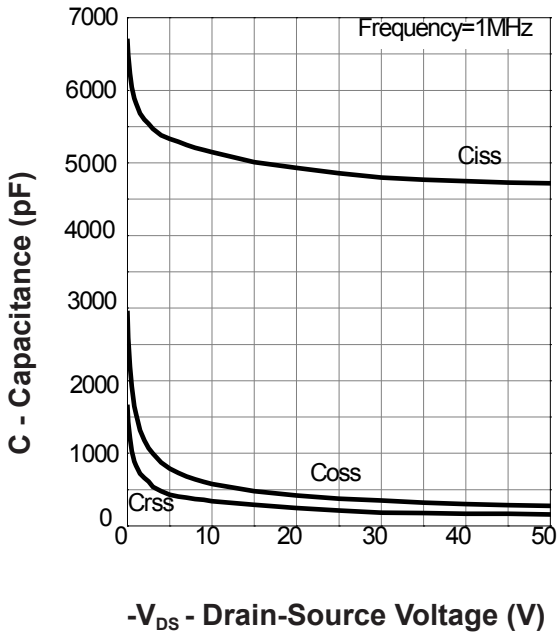




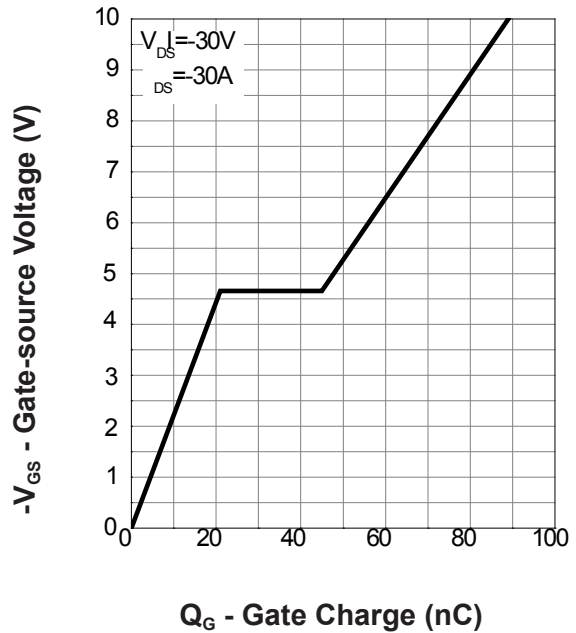
TM100P06D

P -Channel Enhancement Mosfet

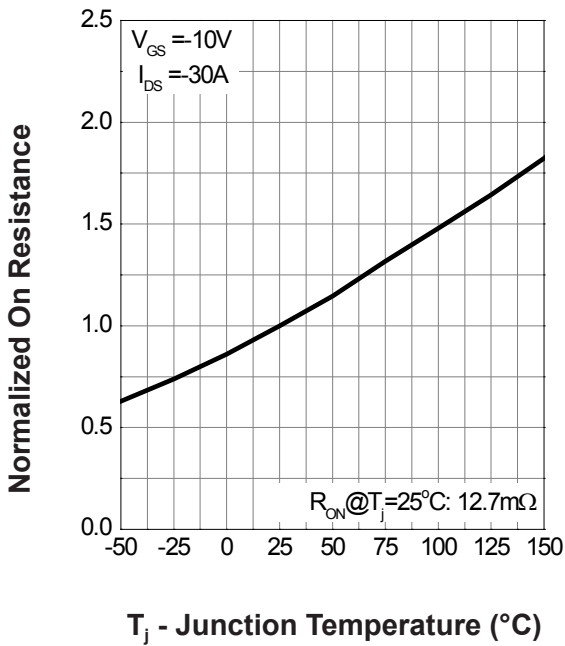
Capacitance



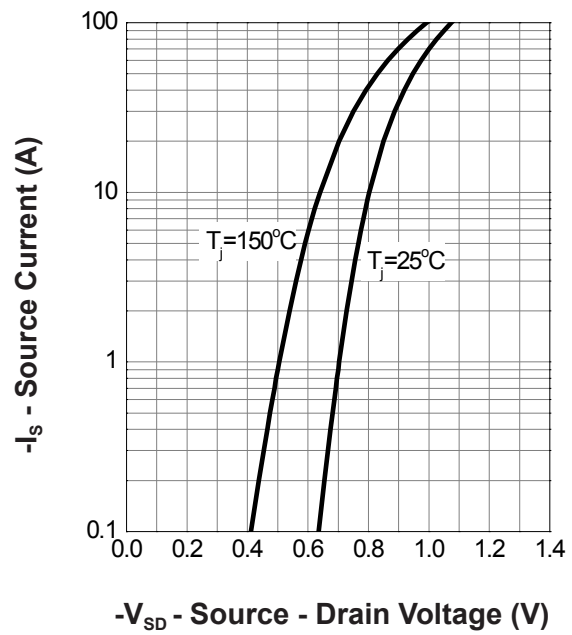
Gate Charge



Drain-Source On Resistance

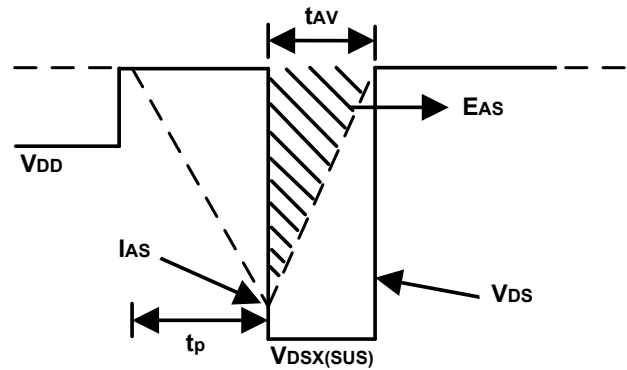
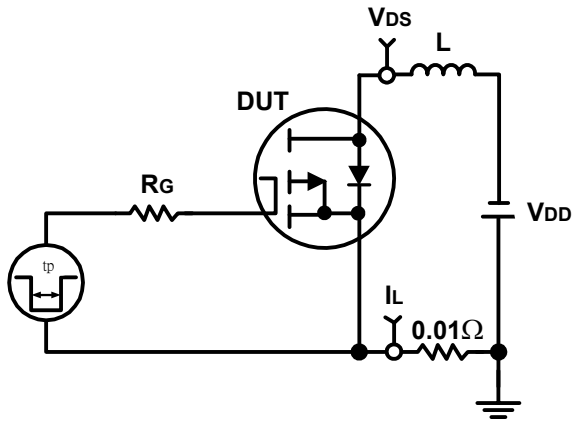


Source-Drain Diode Forward

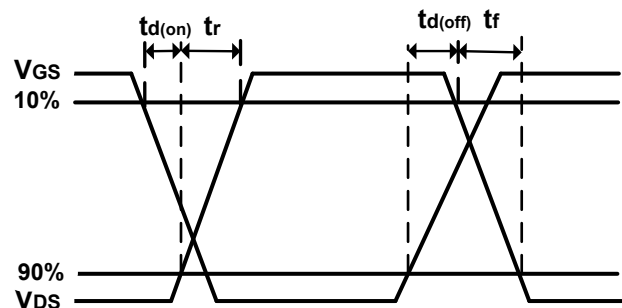
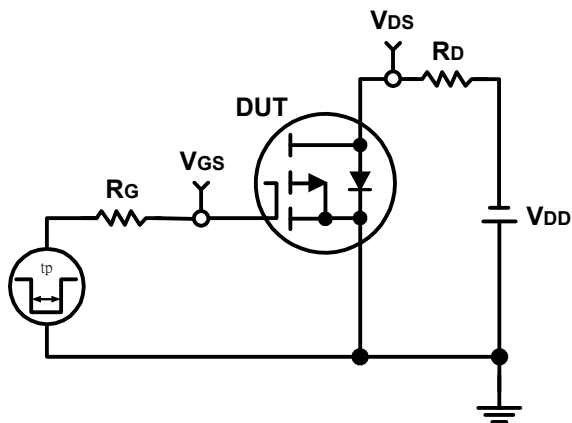




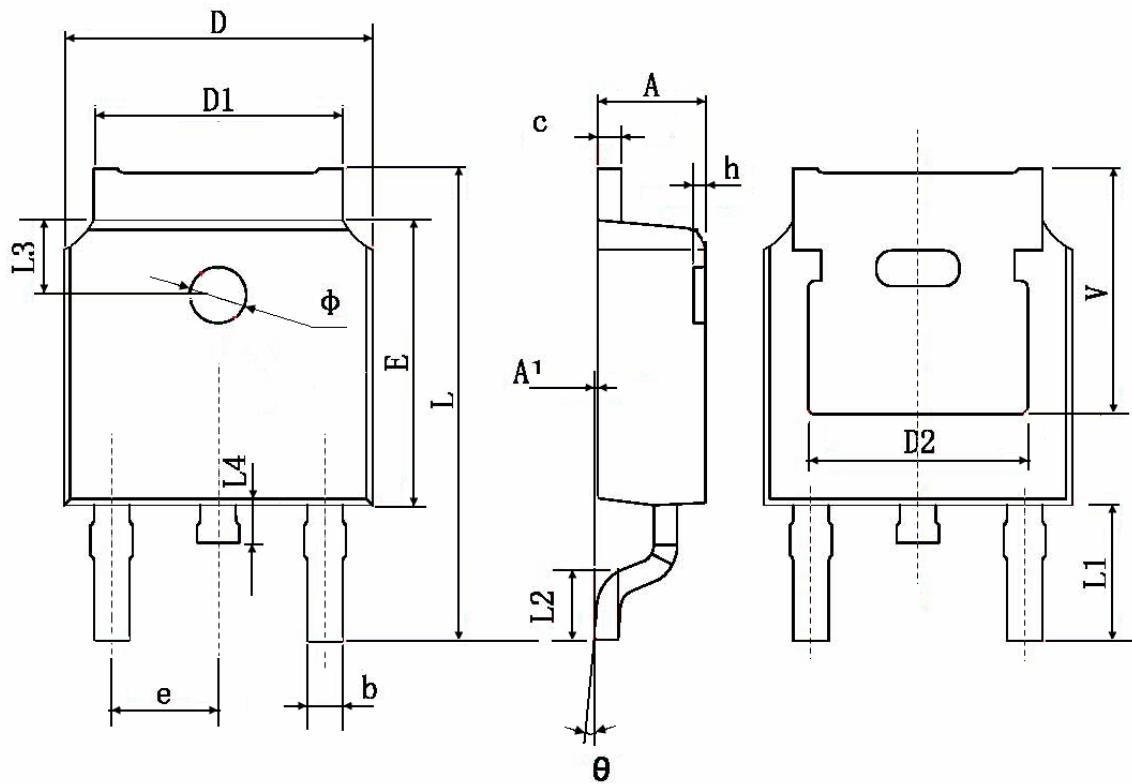
Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms



Package Information:TO-252-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	