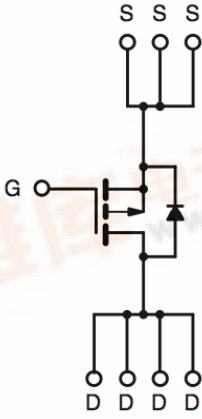


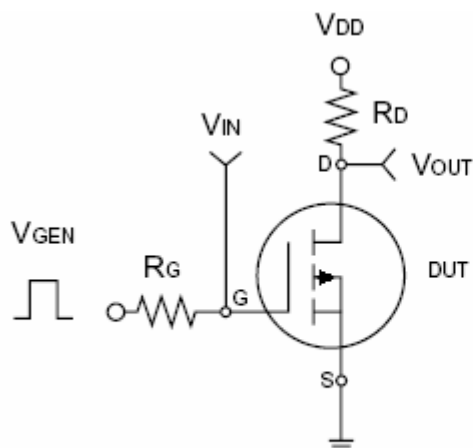
TSC 	TSM9435 -30V P-Channel Enhancement-Mode MOSFET								
 SOP-8 Pin assignment: 1. Source 2. Source 3. Source 4. Gate 5, 6, 7, 8. Drain	$V_{DS} = -30V$ $R_{DS(on)}, V_{GS} @ -10V, I_{ds} @ -5.3A = 60m\Omega$ $R_{DS(on)}, V_{GS} @ -4.5V, I_{ds} @ -4.2A = 90m\Omega$								
Features ✧ Advanced trench process technology ✧ High density cell design for ultra low on-resistance ✧ Fully Characterized Avalanche Voltage and Current ✧ Improved Shoot-Through FOM	Block Diagram P-Channel MOSFET 								
Ordering Information <table><tr><td>Part No.</td><td>Packing</td><td>Package</td></tr><tr><td>TSM9435CS</td><td>Tape & Reel 2,500/per reel</td><td>SOP-8</td></tr></table>	Part No.	Packing	Package	TSM9435CS	Tape & Reel 2,500/per reel	SOP-8			
Part No.	Packing	Package							
TSM9435CS	Tape & Reel 2,500/per reel	SOP-8							
Absolute Maximum Rating (Ta = 25 °C unless otherwise noted)									
Parameter		Symbol	Limit	Unit					
Drain-Source Voltage		V_{DS}	-30V	V					
Gate-Source Voltage		V_{GS}	±20	V					
Continuous Drain Current,		I_D	-5.3	A					
Pulsed Drain Current,		I_{DM}	-20	A					
Maximum Power Dissipation		P_D	2.5	W					
Ta = 70 °C			1.3						
Operating Junction Temperature		T_J	+150	°C					
Operating Junction and Storage Temperature Range		T_J, T_{STG}	- 55 to +150	°C					
Thermal Performance									
Parameter		Symbol	Limit	Unit					
Junction to Foot (Drain) Thermal Resistance		$R_{\theta Jf}$	30	°C/W					
Junction to Ambient Thermal Resistance (PCB mounted)		$R_{\theta Ja}$	50	°C/W					

Note: Surface mounted on FR4 board $t \leq 10sec$.

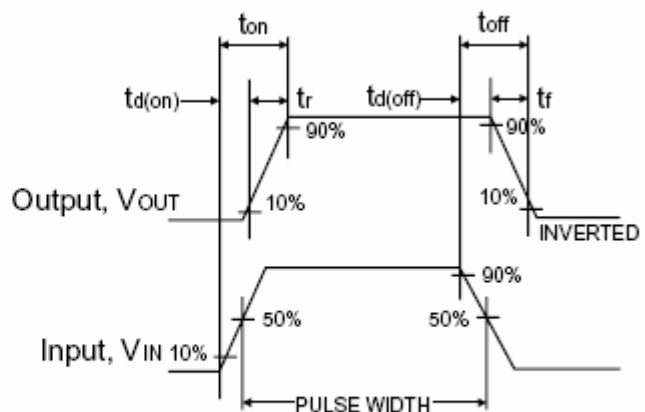


Electrical Characteristics						
(Ta = 25 °C unless otherwise noted)						
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250uA	BV _{DSS}	-30	--	--	V
Drain-Source On-State Resistance	V _{GS} = -10V, I _D = -5.3A	R _{DS(ON)}	--	50	60	mΩ
Drain-Source On-State Resistance	V _{GS} = -4.5V, I _D = -4.2A	R _{DS(ON)}	--	70	90	
Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250uA	V _{GS(TH)}	-1.0	-1.7	-3.0	V
Zero Gate Voltage Drain Current	V _{DS} = -24V, V _{GS} = 0V	I _{DSS}	--	--	-1.0	uA
Gate Body Leakage	V _{GS} = ±20V, V _{DS} = 0V	I _{GSS}	--	--	±100	nA
Forward Transconductance	V _{DS} = -15V, I _D = -5.3A	g _{fs}	4	7	--	S
Dynamic						
Total Gate Charge	V _{DS} = -15V, I _D = -5.3A, V _{GS} = -10V	Q _g	--	9.52	--	nC
Gate-Source Charge		Q _{gs}	--	3.43	--	
Gate-Drain Charge		Q _{gd}	--	1.71	--	
Turn-On Delay Time	V _{DD} = -15V, R _L = 15Ω, I _D = -1A, V _{GEN} = -10V, R _G = 6Ω	t _{d(on)}	--	10.8	--	nS
Turn-On Rise Time		t _r	--	2.33	--	
Turn-Off Delay Time		t _{d(off)}	--	22.53	--	
Turn-Off Fall Time		t _f	--	3.87	--	
Input Capacitance	V _{DS} = -15V, V _{GS} = 0V, f = 1.0MHz	C _{iss}	--	551.57	--	pF
Output Capacitance		C _{oss}	--	90.96	--	
Reverse Transfer Capacitance		C _{rss}	--	60.79	--	
Source-Drain Diode						
Max. Diode Forward Current		I _S	--	--	-1.9	A
Diode Forward Voltage	I _S = -5.3A, V _{GS} = 0V	V _{SD}	--	--	-1.3	V

Note : pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

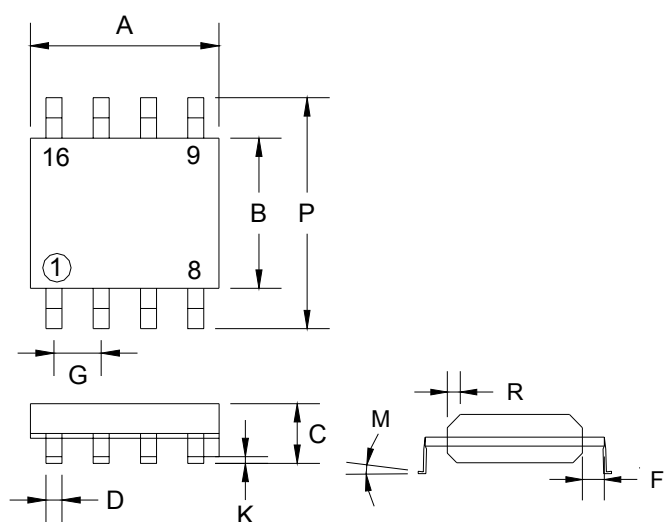


Switching Test Circuit



Switchin Waveforms

SOP-8 Mechanical Drawing



SOP-8 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.196
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 (typ)		0.05 (typ)	
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019