
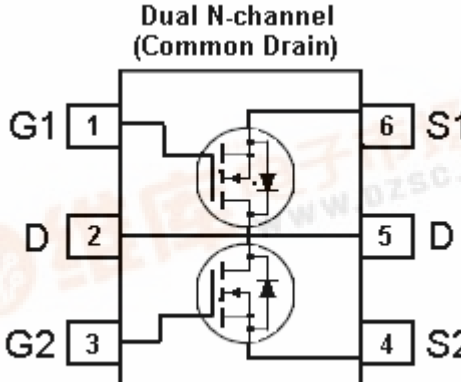
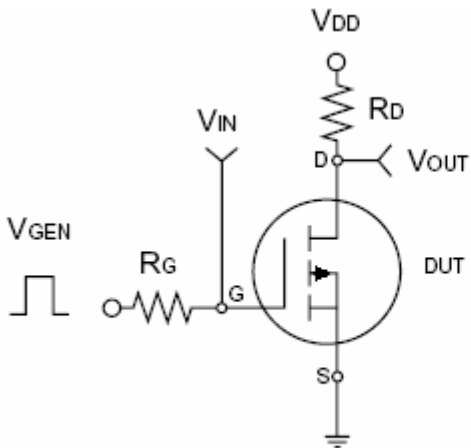
	<h1>TSM9926D</h1> <h2>20V Dual N-Channel Enhancement Mode MOSFET</h2>								
 <p><b>SOT-26</b></p> <p>Pin assignment:</p> <ol style="list-style-type: none"> <li>1. Gate 1</li> <li>2. Drain</li> <li>3. Gate 2</li> <li>4. Source 2</li> <li>5. Drain</li> <li>6. Source 1</li> </ol>	<p><b>V<sub>DS</sub> = 20V</b></p> <p><b>R<sub>DS (on)</sub>, V<sub>GS</sub> @ 4.5V, I<sub>DS</sub> @ 6A = 30mΩ</b></p> <p><b>R<sub>DS (on)</sub>, V<sub>GS</sub> @ 2.5V, I<sub>DS</sub> @ 5.2A = 40mΩ</b></p>								
<p><b>Features</b></p> <ul style="list-style-type: none"> <li>✧ Advanced trench process technology</li> <li>✧ High density cell design for ultra low on-resistance</li> <li>✧ Excellent thermal and electrical capabilities</li> <li>✧ Surface mount</li> <li>✧ Fast switching</li> </ul>	<p><b>Block Diagram</b></p>  <p style="text-align: center;"><b>Dual N-channel (Common Drain)</b></p>								
<p><b>Ordering Information</b></p> <table border="1" data-bbox="172 1048 758 1131"> <thead> <tr> <th>Part No.</th> <th>Packing</th> <th>Package</th> </tr> </thead> <tbody> <tr> <td>TSM9926DCX6</td> <td>Tape &amp; Reel</td> <td>SOT-26</td> </tr> </tbody> </table>	Part No.	Packing	Package	TSM9926DCX6	Tape & Reel	SOT-26			
Part No.	Packing	Package							
TSM9926DCX6	Tape & Reel	SOT-26							
<p><b>Absolute Maximum Rating</b> (Ta = 25 °C unless otherwise noted)</p>									
<p><b>Parameter</b></p>	<p><b>Symbol</b></p>	<p><b>Limit</b></p>	<p><b>Unit</b></p>						
<p>Drain-Source Voltage</p>	<p>V<sub>DS</sub></p>	<p>20</p>	<p>V</p>						
<p>Gate-Source Voltage</p>	<p>V<sub>GS</sub></p>	<p>±12</p>	<p>V</p>						
<p>Continuous Drain Current, V<sub>GS</sub> @4.5V.</p>	<p>I<sub>D</sub></p>	<p>6</p>	<p>A</p>						
<p>Pulsed Drain Current, V<sub>GS</sub> @4.5V</p>	<p>I<sub>DM</sub></p>	<p>30</p>	<p>A</p>						
<p>Maximum Power Dissipation</p>	<p>Ta = 25 °C</p>	<p>1.25</p>	<p>W</p>						
	<p>Ta = 25 °C (Peak)</p>	<p>2</p>	<p>W</p>						
<p>Operating Junction Temperature</p>	<p>T<sub>J</sub></p>	<p>+150</p>	<p>°C</p>						
<p>Operating Junction and Storage Temperature Range</p>	<p>T<sub>J</sub>, T<sub>STG</sub></p>	<p>- 55 to +150</p>	<p>°C</p>						
<p><b>Thermal Performance</b></p>									
<p><b>Parameter</b></p>	<p><b>Symbol</b></p>	<p><b>Limit</b></p>	<p><b>Unit</b></p>						
<p>Junction to Ambient Thermal Resistance (PCB mounted)</p>	<p>Rθja</p>	<p>100</p>	<p>°C/W</p>						

Note: Surface mounted on FR4 board t<=5sec.

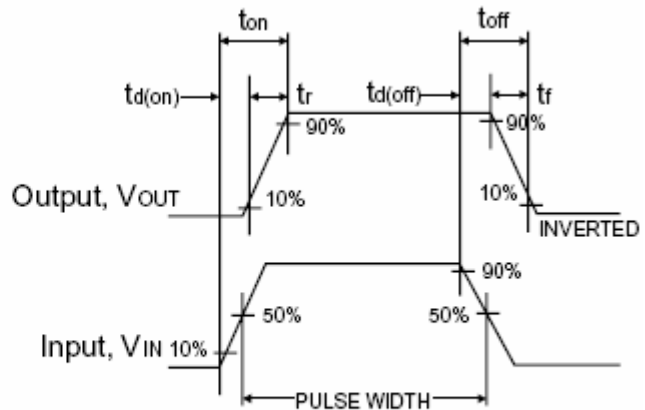


Electrical Characteristics (per channel)						
Ta = 25 °C unless otherwise noted						
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	$BV_{DSS}$	20	--	--	V
Drain-Source On-State Resistance	$V_{GS} = 4.5V, I_D = 6A$	$R_{DS(ON)}$	--	21	30	mΩ
Drain-Source On-State Resistance	$V_{GS} = 2.5V, I_D = 5.2A$	$R_{DS(ON)}$	--	30	40	
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	$V_{GS(TH)}$	0.6	--	--	V
Zero Gate Voltage Drain Current	$V_{DS} = 20V, V_{GS} = 0V$	$I_{DSS}$	--	--	1.0	μA
Gate Body Leakage	$V_{GS} = \pm 12V, V_{DS} = 0V$	$I_{GSS}$	--	--	± 100	nA
Forward Transconductance	$V_{DS} = 10V, I_D = 6A$	$g_{fs}$	7	13	--	S
<b>Dynamic</b>						
Total Gate Charge	$V_{DS} = 10V, I_D = 6A,$ $V_{GS} = 4.5V$	$Q_g$	--	7.1	--	nC
Gate-Source Charge		$Q_{gs}$	--	1.96	--	
Gate-Drain Charge		$Q_{gd}$	--	2.94	--	
Turn-On Delay Time	$V_{DD} = 10V, R_L = 10\Omega,$ $I_D = 1A, V_{GEN} = 4.5V,$ $R_G = 6\Omega$	$t_{d(on)}$	--	4.9	--	nS
Turn-On Rise Time		$t_r$	--	2.6	--	
Turn-Off Delay Time		$t_{d(off)}$	--	15.7	--	
Turn-Off Fall Time		$t_f$	--	14	--	
Input Capacitance	$V_{DS} = 10V, V_{GS} = 0V,$ $f = 1.0MHz$	$C_{iss}$	--	620	--	pF
Output Capacitance		$C_{oss}$	--	124	--	
Reverse Transfer Capacitance		$C_{rss}$	--	95	--	
<b>Source-Drain Diode</b>						
Max. Diode Forward Current		$I_S$	--	--	1.7	A
Diode Forward Voltage	$I_S = 1.7A, V_{GS} = 0V$	$V_{SD}$	--	--	1.2	V

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



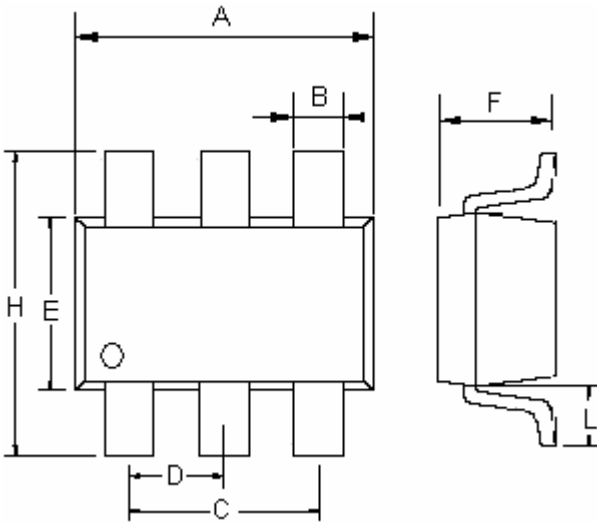
Switching Test Circuit



Switchin Waveforms



## SOT-26 Mechanical Drawing



SOT-26 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.70	3.00	0.106	0.118
B	0.25	0.50	0.010	0.020
C	1.90(typ)		0.075(typ)	
D	0.95(typ)		0.037(typ)	
E	1.50	1.70	0.059	0.067
F	1.05	1.35	0.041	0.053
H	2.60	3.00	0.102	0.118
L	0.60(typ)		0.024(typ)	