
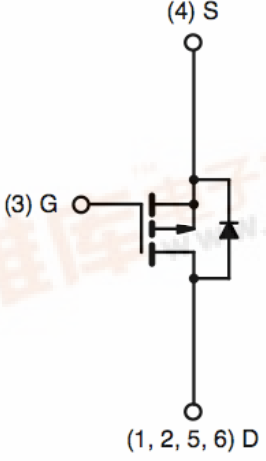
	<h1 style="margin: 0;">TSM3443</h1> <h2 style="margin: 0;">-20V P-Channel Enhancement-Mode MOSFET</h2> <span style="float: right; font-weight: normal;">Preliminary</span>								
<p><b>SOT-26</b></p>  <p>Pin assignment:          1. Drain    6. Drain          2. Drain    5. Drain          3. Gate    4. Source</p>	<p><b>V<sub>DS</sub> = -20V</b>  <b>R<sub>DS (on)</sub>, V<sub>GS</sub> @ -4.5V, I<sub>DS</sub> @ -4.7A =60mΩ</b>  <b>R<sub>DS (on)</sub>, V<sub>GS</sub> @ -2.5V, I<sub>DS</sub> @ -3.7A =100mΩ</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>✧ Fully Characterized Avalanche Voltage and Current</li> <li>✧ Improved Shoot-Through FOM</li> </ul>	<p><b>Block Diagram</b></p> <p style="text-align: center;"><b>P-Channel MOSFET</b></p> 								
<p><b>Ordering Information</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Part No.</th> <th style="width: 30%;">Packing</th> <th style="width: 40%;">Package</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">TSM3443CX6</td> <td style="text-align: center;">Tape &amp; Reel 3,000/per reel</td> <td style="text-align: center;">SOT-26</td> </tr> </tbody> </table>	Part No.	Packing	Package	TSM3443CX6	Tape & Reel 3,000/per reel	SOT-26			
Part No.	Packing	Package							
TSM3443CX6	Tape & Reel 3,000/per 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>-20V</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,</p>	<p>I<sub>D</sub></p>	<p>-4.7</p>	<p>A</p>						
<p>Pulsed Drain Current,</p>	<p>I<sub>DM</sub></p>	<p>-20</p>	<p>A</p>						
<p>Maximum Power Dissipation</p>	<p>Ta = 25 °C</p>	<p>2</p>	<p>W</p>						
	<p>Ta = 70 °C</p>	<p>1.3</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 Foot (Drain) Thermal Resistance</p>	<p>R<sub>θjf</sub></p>	<p>30</p>	<p>°C/W</p>						
<p>Junction to Ambient Thermal Resistance (PCB mounted)</p>	<p>R<sub>θja</sub></p>	<p>50</p>	<p>°C/W</p>						

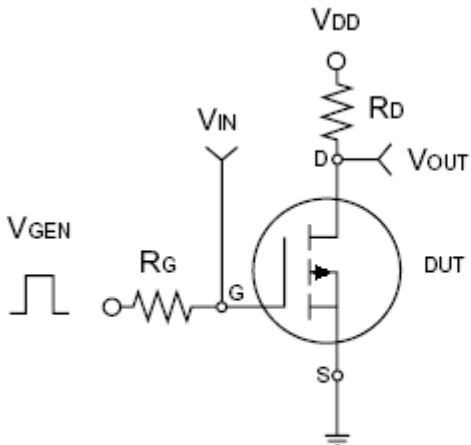
Note: Surface mounted on FR4 board t<=10sec.



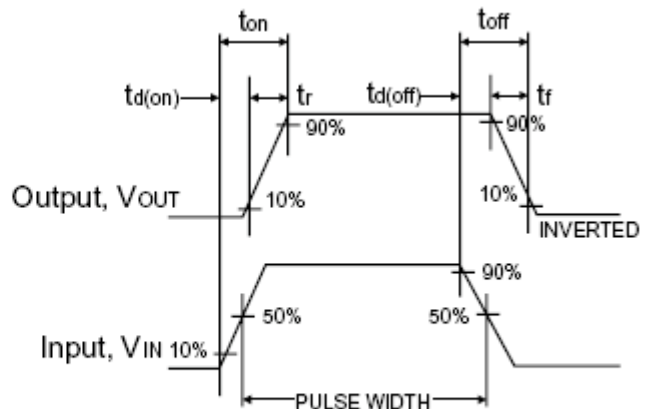


Electrical Characteristics						
(Ta = 25 °C unless otherwise noted)						
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
<b>Static</b>						
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = -250\mu A$	$BV_{DSS}$	-20	--	--	V
Drain-Source On-State Resistance	$V_{GS} = -4.5V, I_D = -4.7A$	$R_{DS(ON)}$	--	48	60	mΩ
Drain-Source On-State Resistance	$V_{GS} = -2.5V, I_D = -1A$	$R_{DS(ON)}$	--	80	100	
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\mu A$	$V_{GS(TH)}$	-0.6	--	-1.4	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
On-State Drain Current	$V_{DS} = -5V, V_{GS} = -4.5V$	$I_{D(ON)}$	-15	--	--	A
Forward Transconductance	$V_{DS} = -10V, I_D = -4.7A$	$g_{fs}$	--	11	--	S
<b>Dynamic</b>						
Total Gate Charge	$V_{DS} = -10V, I_D = -4.7A,$ $V_{GS} = -4.5V$	$Q_g$	--	6	9	nC
Gate-Source Charge		$Q_{gs}$	--	1.4	--	
Gate-Drain Charge		$Q_{gd}$	--	1.9	--	
Turn-On Delay Time	$V_{DD} = -10V, R_L = 10\Omega,$ $I_D = -1A, V_{GEN} = -4.5V,$ $R_G = 6\Omega$	$t_{d(on)}$	--	22	35	nS
Turn-On Rise Time		$t_r$	--	35	55	
Turn-Off Delay Time		$t_{d(off)}$	--	45	70	
Turn-Off Fall Time		$t_f$	--	25	40	
Input Capacitance	$V_{DS} = -10V, V_{GS} = 0V,$ $f = 1.0MHz$	$C_{iss}$	--	640	--	pF
Output Capacitance		$C_{oss}$	--	180	--	
Reverse Transfer Capacitance		$C_{rss}$	--	90	--	
<b>Source-Drain Diode</b>						
Max. Diode Forward Current		$I_S$	--	--	-1.3	A
Diode Forward Voltage	$I_S = -1.3A, V_{GS} = 0V$	$V_{SD}$	--	-0.75	-1.2	V

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

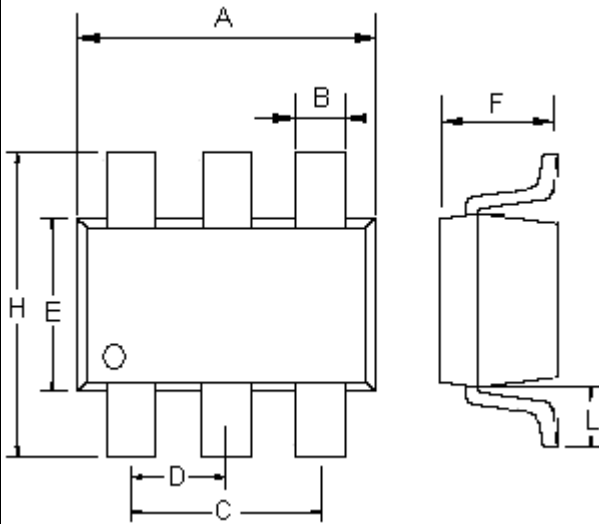


Switching Test Circuit



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)	