

### DESCRIPTION

The PT8810 uses advanced trench technology to provide excellent  $R_{DS(ON)}$  and low gate charge. It is ESD protected. This device is suitable for use as a uni-directional or bi-directional load switch, facilitated by its common-drain configuration.

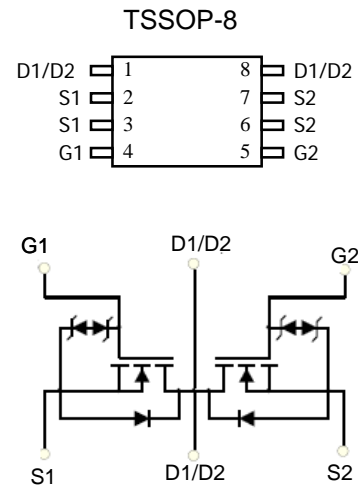
### Features

$$V_{DS} (V) = 20V$$

$$I_D = 6A (V_{GS} = 10V)$$

$$R_{DS(ON)} < 22m\Omega (V_{GS} = 4.5V)$$

$$R_{DS(ON)} < 30m\Omega (V_{GS} = 2.5V)$$



### MAXIMUM RATINGS ( $T_a=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 10$	V
Continuous Drain Current	$I_D$	7	A
Pulsed Drain Current(note1)	$I_{DM}^*$	25	A
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	125	$^\circ C/W$
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55~+150	$^\circ C$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	$T_L$	260	$^\circ C$

\*Repetitive rating: Pulse width limited by junction temperature.

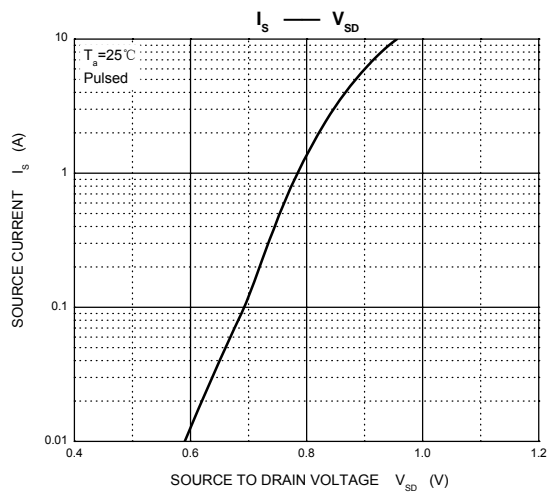
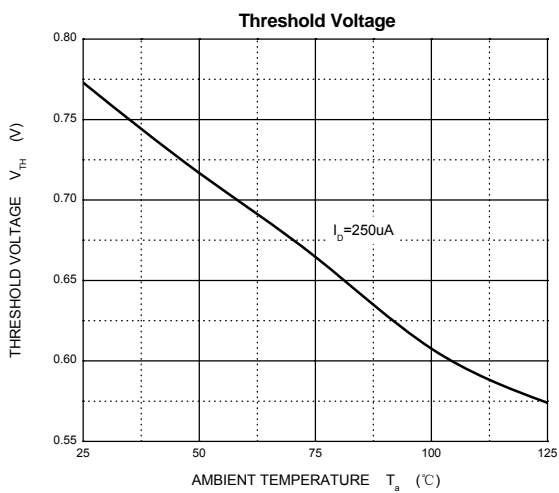
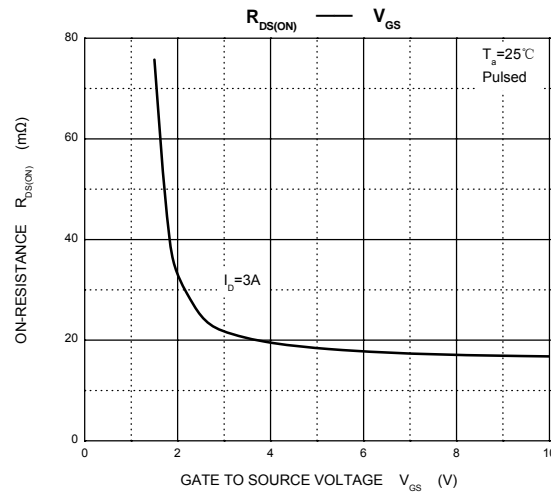
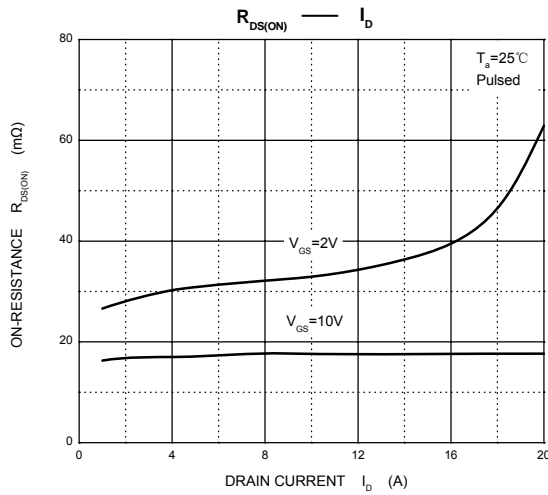
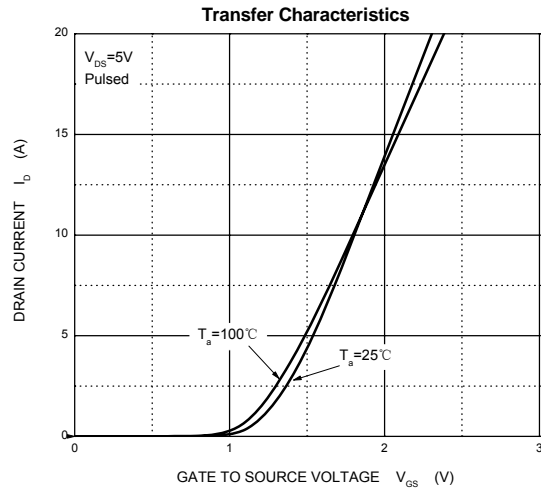
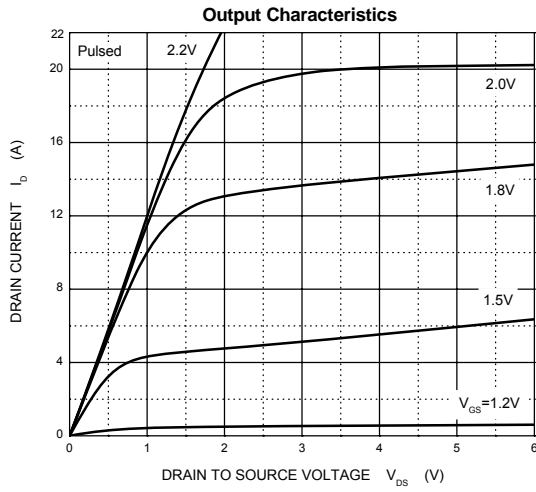
$T_a=25^{\circ}\text{C}$  unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Gate threshold voltage (note 1)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5		1.0	V
Drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 6A$			22	$m\Omega$
		$V_{GS} = 2.5V, I_D = 5.5A$			30	$m\Omega$
Forward transconductance (note 1)	$g_{FS}$	$V_{DS} = 5V, I_D = 7A$		9		S
Diode forward voltage(note 1)	$V_{SD}$	$I_S = 1.5A, V_{GS} = 0V$			1.2	V
<b>DYNAMIC PARAMETERS (note 2)</b>				1150		
Input Capacitance	$C_{iss}$	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		185		pF
Output Capacitance	$C_{oss}$			145		pF
Reverse Transfer Capacitance	$C_{rss}$			15		pF
Total gate charge	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 6A$		0.8		nC
Gate-source charge	$Q_{gs}$			3.2		nC
Gate-drain charge	$Q_{gd}$					nC
<b>SWITCHING PARAMETERS (note 2)</b>				6		
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 5V, V_{DD} = 10V,$ $R_L = 1.5\Omega, R_{GEN} = 3\Omega$		13		ns
Turn-on rise time	$t_r$			52		ns
Turn-off delay time	$t_{d(off)}$			16		ns
Turn-off fall time	$t_f$					ns

**Notes :**

1. Pulse Test : Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 0.5\%$ .
2. Guaranteed by design, not subject to production testing.

Typical Characteristics



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