



### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
30V	8.0m $\Omega$ @10V	10A
	15m $\Omega$ @4.5V	

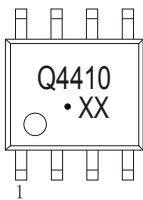
### Feature

- High density cell design for ultra low  $R_{DS(ON)}$
- Excellent package for good heat dissipation

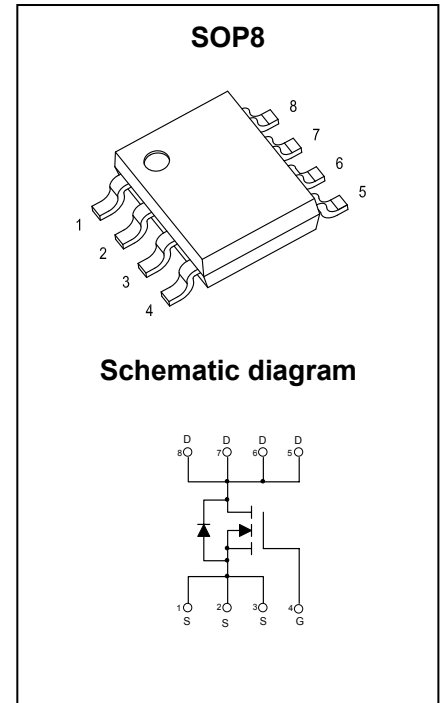
### Application

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

### MARKING:



Q4410 = Device Code  
XX = Date Code



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current <sup>1,2</sup>	$I_D$	10	A
Pulsed Drain Current	$I_{DM}$	30	A
Power Dissipation	$P_D$	3.1	W
Thermal Resistance from Junction to Ambient <sup>1,2</sup>	$R_{\theta JA}$	40	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

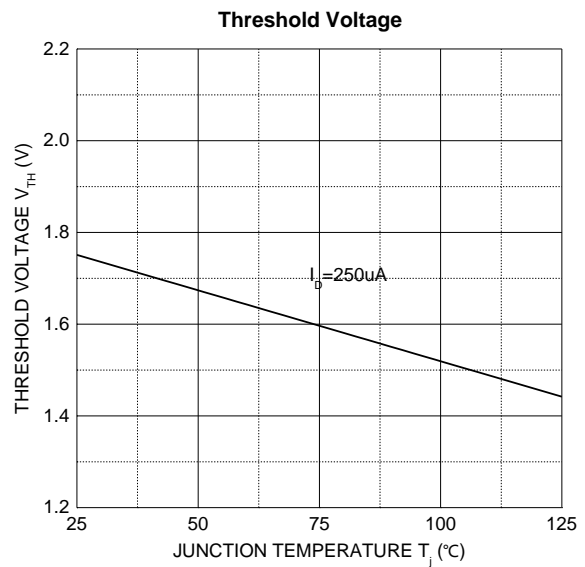
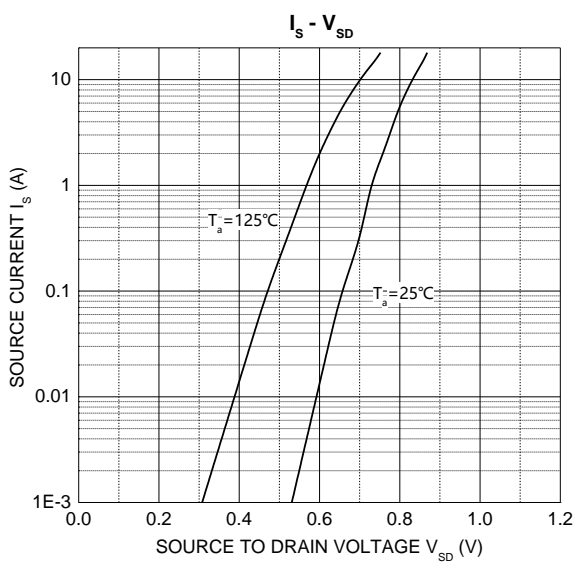
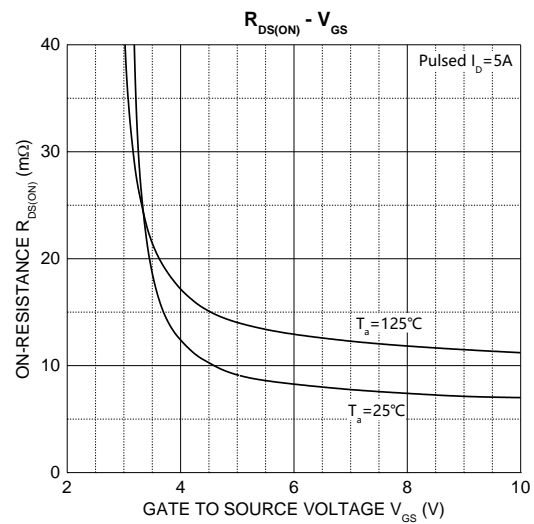
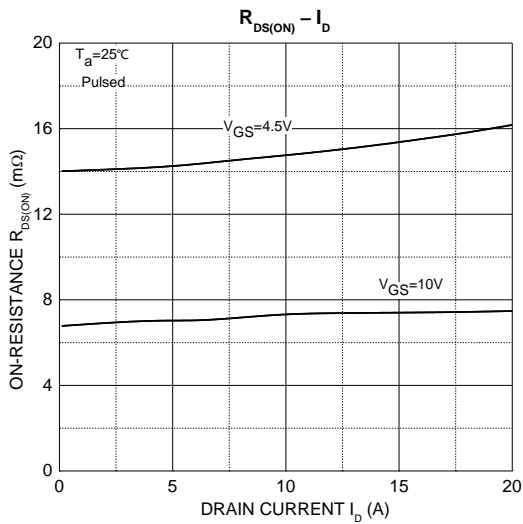
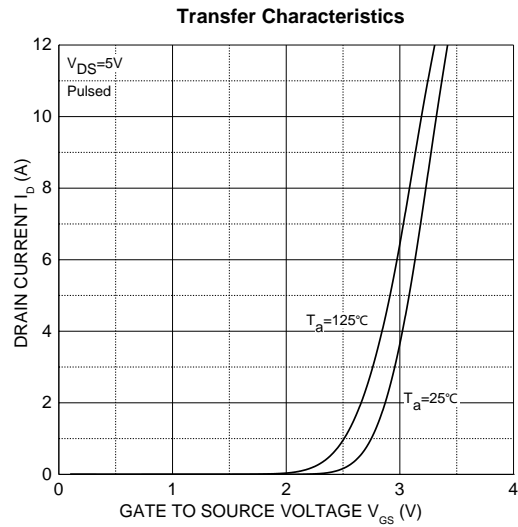
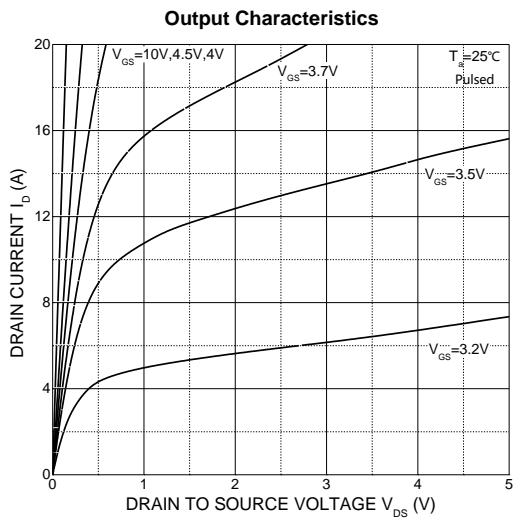
## MOSFET ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA
<b>On Characteristics<sup>3</sup></b>						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3	V
Drainsource onresistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 7A$		8.0	14	m $\Omega$
		$V_{GS} = 4.5V, I_D = 5A$		15	20	
Forward transconductance	$g_{FS}$	$V_{DS} = 15V, I_D = 5A$		6		S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		1000		pF
Output Capacitance	$C_{oss}$			137		
Reverse Transfer Capacitance	$C_{rss}$			122		
Gate resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		2		$\Omega$
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = 30V, V_{GS} = 10V, I_D = 10A$		31		nC
GateSource Charge	$Q_{gs}$			2.3		
GateDrain Charge	$Q_{gd}$			7.7		
Turnon delay time	$t_{d(on)}$	$V_{DD} = 25V, R_G = 6.0\Omega, V_{GS} = 10V, R_L = 25\Omega$		14		ns
Turnon rise time	$t_r$			13.2		
Turnoff delay time	$t_{d(off)}$			45.8		
Turnoff fall time	$t_f$			24		
<b>Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	$V_{SD}$	$V_{GS} = 0V, I_S = 2.3A$			1.2	V

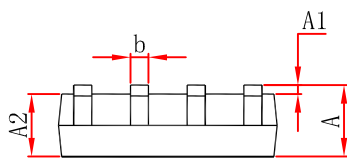
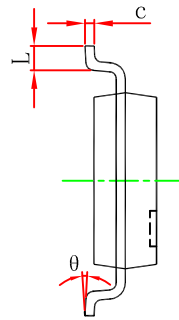
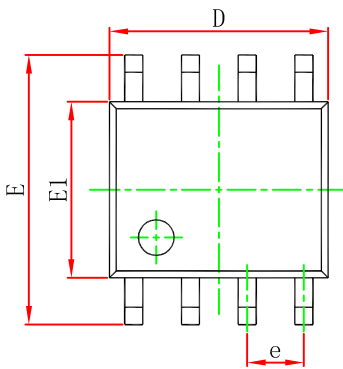
Notes :

1.  $R_{\theta JA}$  is measured with the device mounted on 1 in<sup>2</sup> FR4 board with 1 oz. single side copper, in a still air environment with  $T_A = 25^\circ\text{C}$ .
2.  $R_{\theta JA}$  is measured in the steady state
3. Pulse test : Pulse width  $\leq 380\mu s$ , duty cycle  $\leq 2\%$ .

**Typical Characteristics**



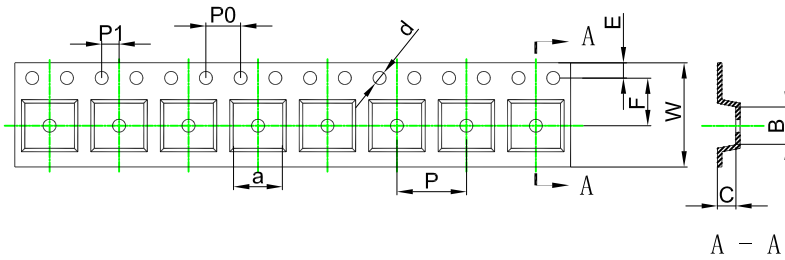
## SOP8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

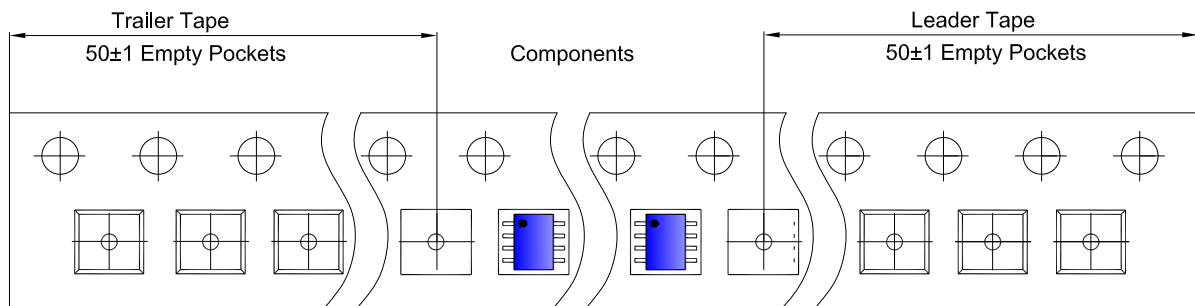
## SOP8 Tape and Reel

### SOP8 Embossed Carrier Tape

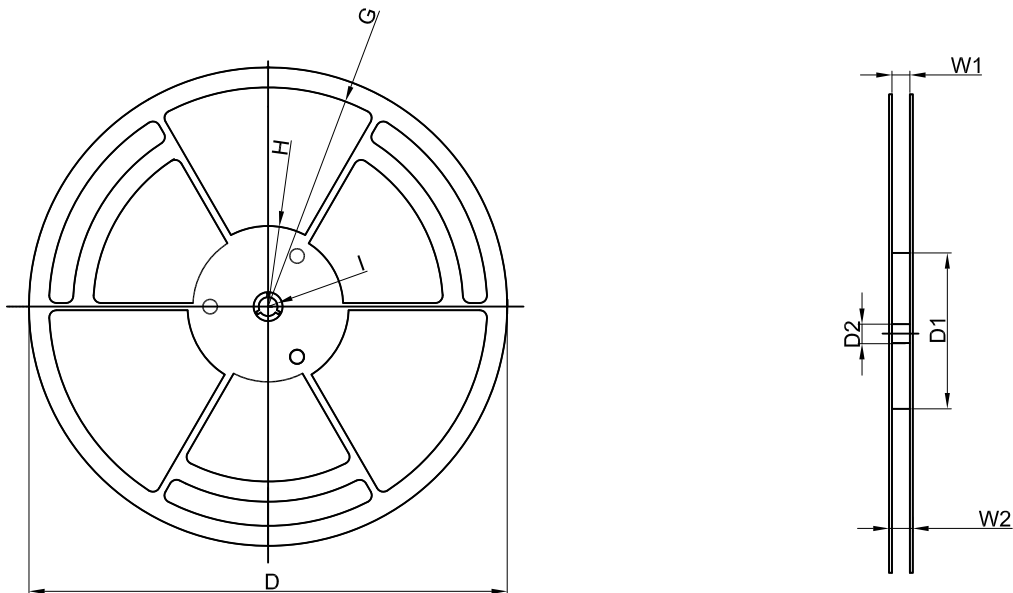


Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOP8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

### SOP8 Tape Leader and Trailer



### SOP8 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13" Dia	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
4,000 pcs	13 inch	8,000 pcs	360×360×65	64,000 pcs	565×380×390	