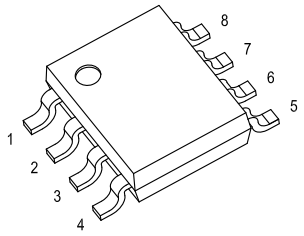
GP4824Q

30V Dual N-Channel MOSFET

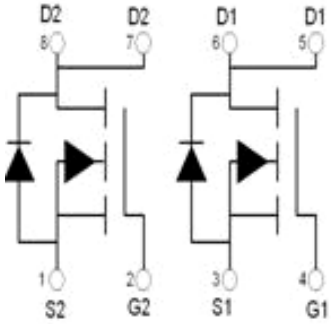
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	10mΩ@10V	10A
	14mΩ@4.5V	

SOP8



Schematic diagram



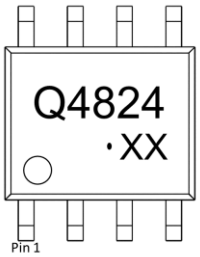
Feature

- High cell density trenched N-ch MOSFETs
- Super low gate charge
- Advanced high cell density Trench technology

Application

- Battery protection applications
- Load switch

MARKING:



Q4824 = Device Code

XX = Date Code

Soild Dot = Green Device

ABSOLUTE MAXIMUM RATINGS (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D(1)	10	A
Pulsed Drain Current	I_{DM}(1), (2)	30	A
Single Pulsed Avalanche Energy	E_{AS}*	7.2	mJ
Avalanche Current	I_{AS}	12	A
Power Dissipation	P_D(3)	1.25	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

*E_{AS} Test Condition V_{DD}=15V,V_{GS}=10V,L=0.1mH,I_{AS}=12A

MOSFET ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =30V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$ (4)	V_{DS} =V_{GS}, I_D =250μA	1.0	1.6	3.0	V
Drain-source on-resistance	$R_{DS(on)}$ (4)	V_{GS} =10V, I_D =12A		10	15	mΩ
		V_{GS} =4.5V, I_D =10A		14	20	
Forward tranconductance	g_{FS}(4)	V_{DS} =5V, I_D =10A		100		S
Dynamic characteristics(5)						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz		825		pF
Output capacitance	C_{oss}			136		
Reverse transfer capacitance	C_{rss}			110		
Switching Characteristics(5)						
Total gate charge	Q_g	V_{DS} =15V,V_{GS} =10V,I_D =10A		13		nC
Gate-source charge	Q_{gs}			3		
Gate-drain charge	Q_{gd}			4.5		
Turn-on delay time	$t_{d(on)}$	V_{DD}=15V , V_{GS}=10V , R_G=1.8Ω, R_L=1.8Ω			10	ns
Turn-on rise time	t_r				8	
Turn-off delay time	$t_{d(off)}$				30	
Turn-off fall time	t_f				5	
Diode Characteristics						
Continuous Source Current	I_S	V_G=V_D=0V , Force Current			20	A
Pulsed Source Current	I_{SM}				60	
Diode Forward Voltage	V_{SD}(4)	V_{GS}=0V , I_S=10A , T_J=25℃			1.2	V

Notes:

1.The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ c opper

2.Pulse Test:Pulse Width < 10us, Duty Cycle < 0.5%.

3.The power dissipation is limited by 150℃ junction temperature

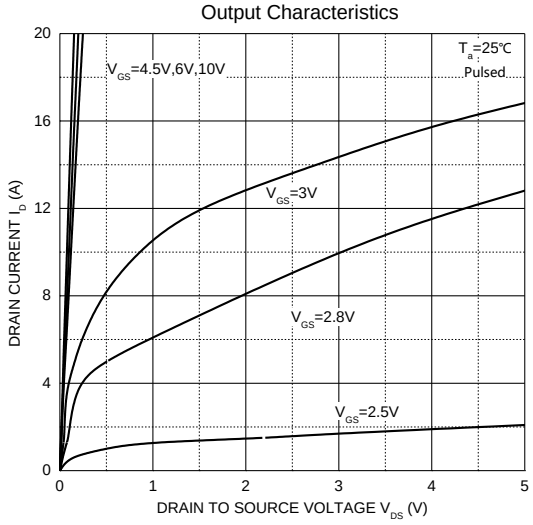
4.Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.

5.Guaranteed by design, not subject to production testing.

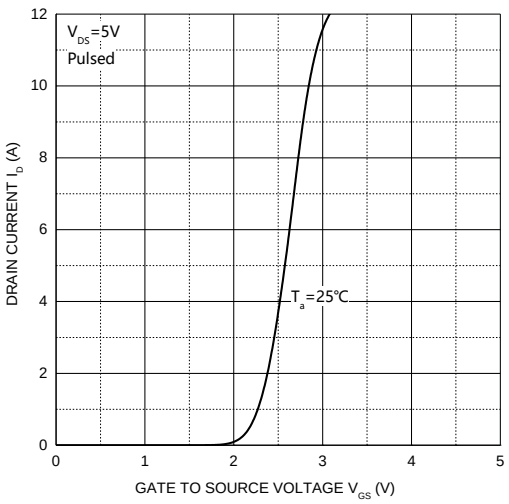
6.The data is theoretically the same as I_D, in real applications , should be limited by total power dissip ation.

Typical Electrical and Thermal Characteristics

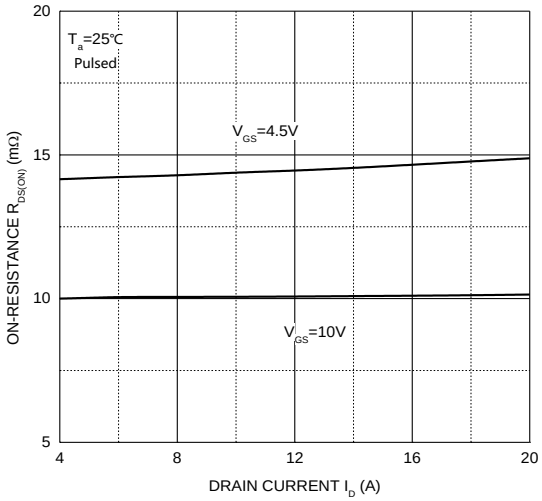
Output Characteristics



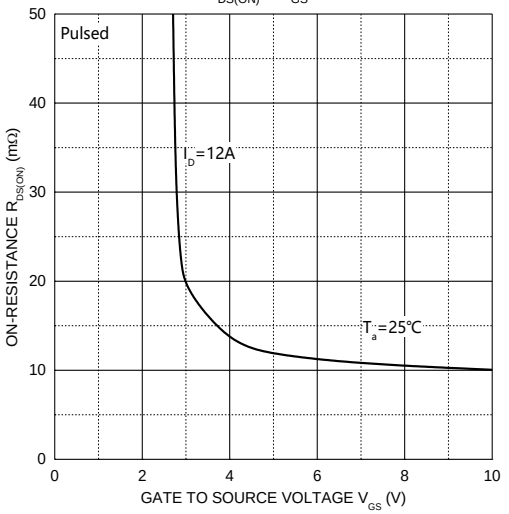
Transfer Characteristics



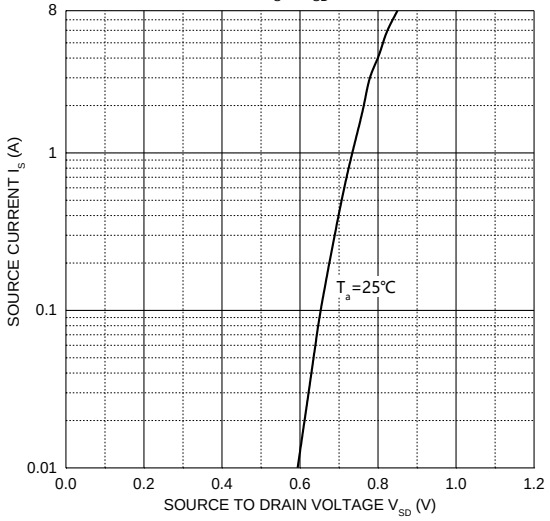
$R_{DS(ON)}$ – I_D



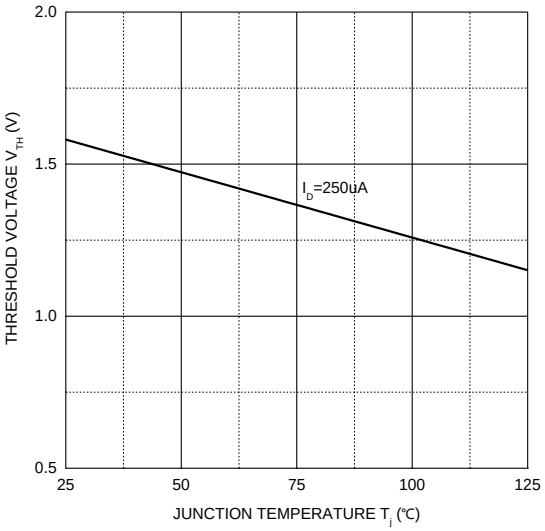
$R_{DS(ON)}$ - V_{GS}



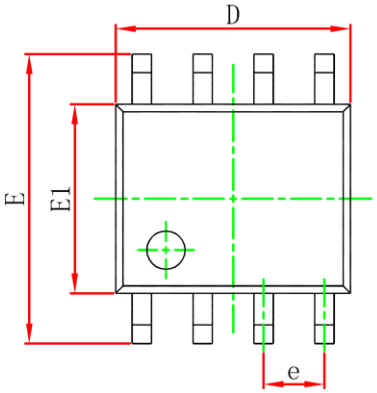
I_S - V_{SD}

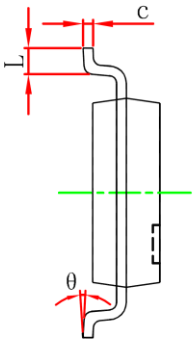


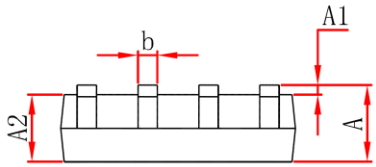
Threshold Voltage



SOP8 Package Information



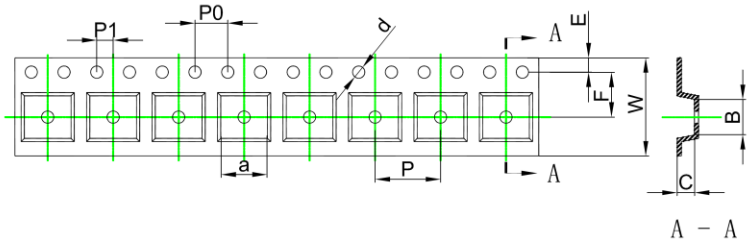




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800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

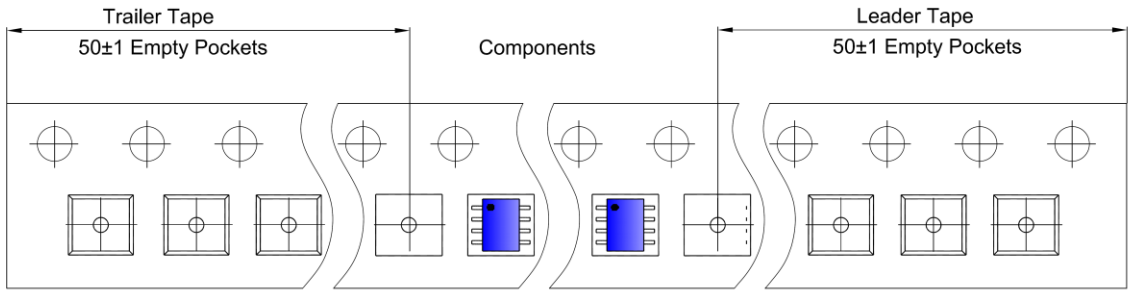
SOP8 Tape and Reel

SOP8 Embossed Carrier Tape

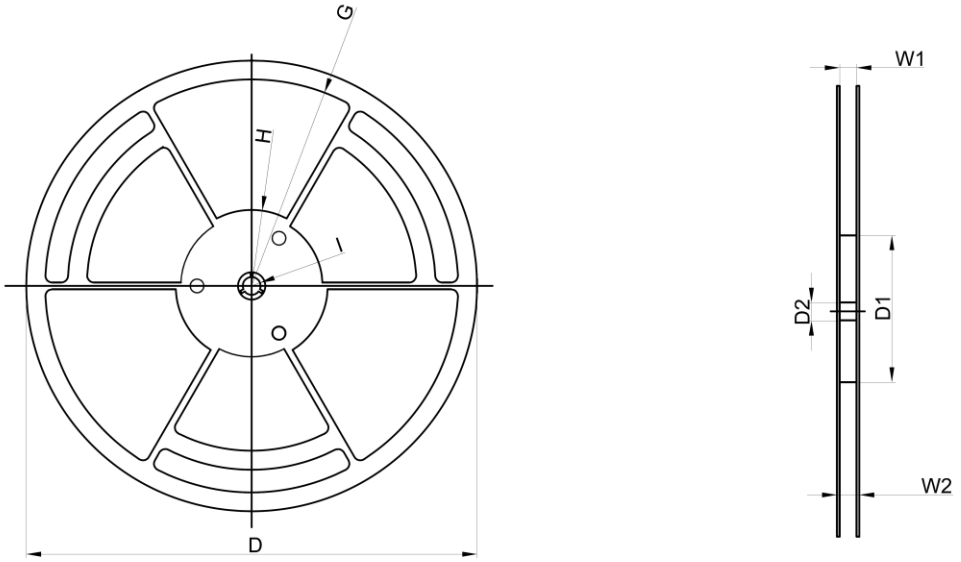


Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOP8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

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	