

SOP-8 Plastic-Encapsulate MOSFET

60V Dual N-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	30mΩ@10V	6.0A
	31mΩ@6V	
	35mΩ@4.5V	

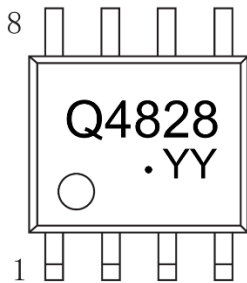
Feature

- Trench Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge

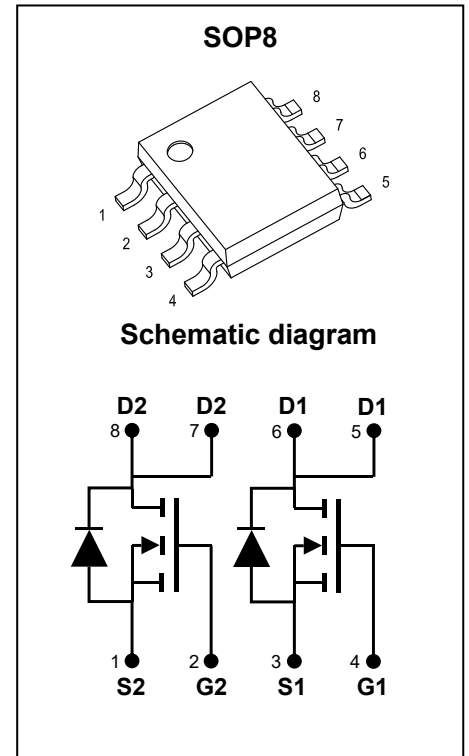
Application

- PWM Applications
- Load Switch

MARKING:



Q4828 = Device Code
 YY = Date Code
 Solid Dot = Green Device



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ^{1,2}	I_D	6.0	A
Pulsed Drain Current	I_{DM}	20	A
Single Pulsed Avalanche Energy ⁴	E_{AS}	49	mJ
Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient ^{1,2}	$R_{\theta JA}$	100	$^{\circ}C/W$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150	$^{\circ}C$

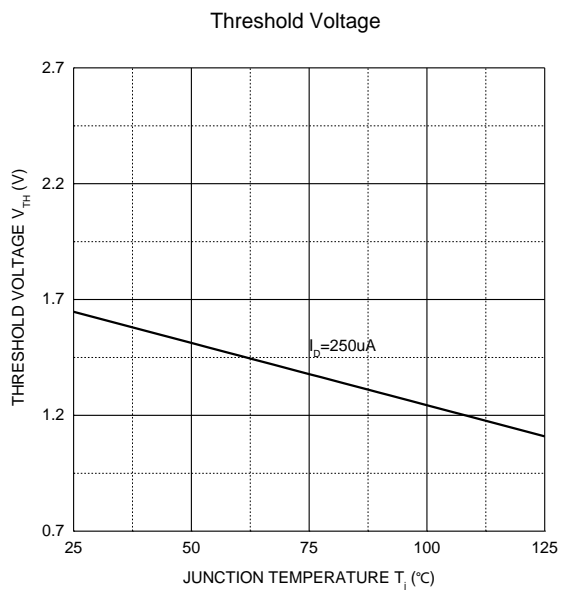
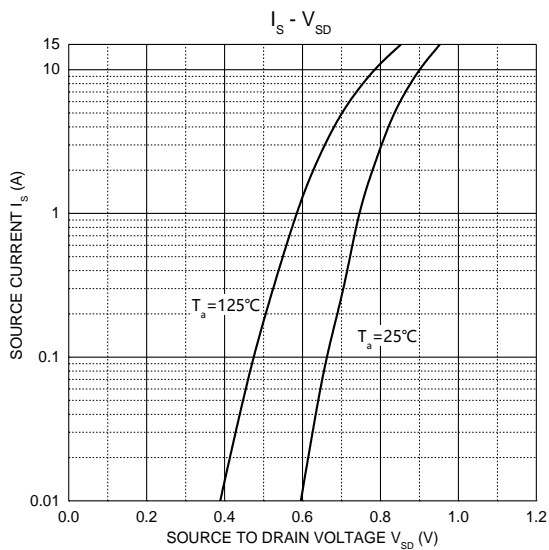
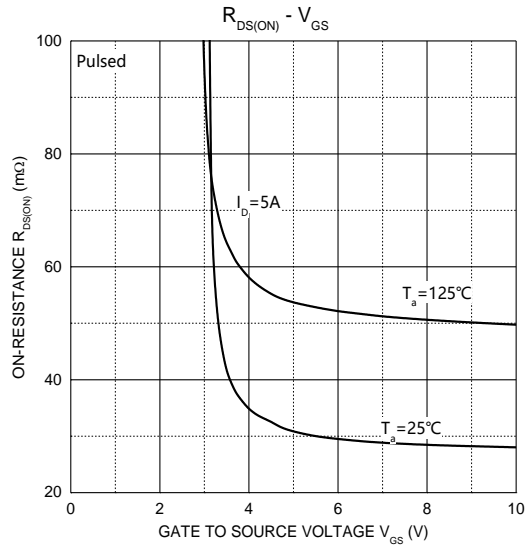
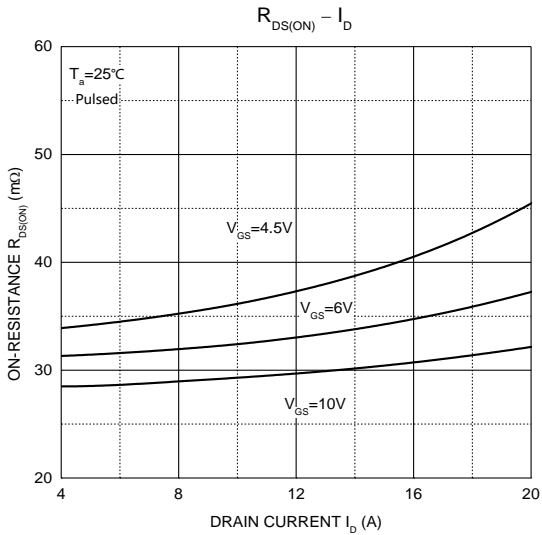
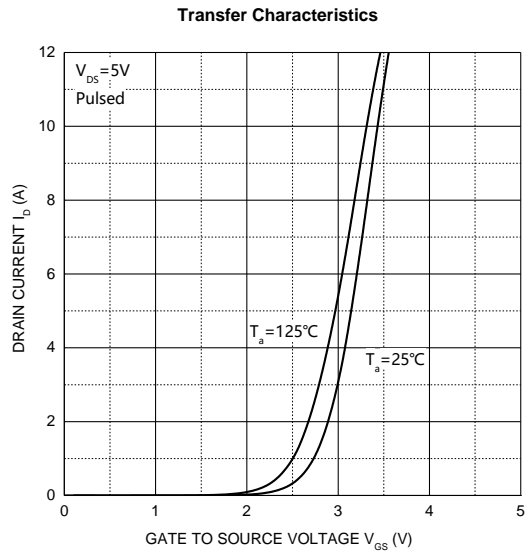
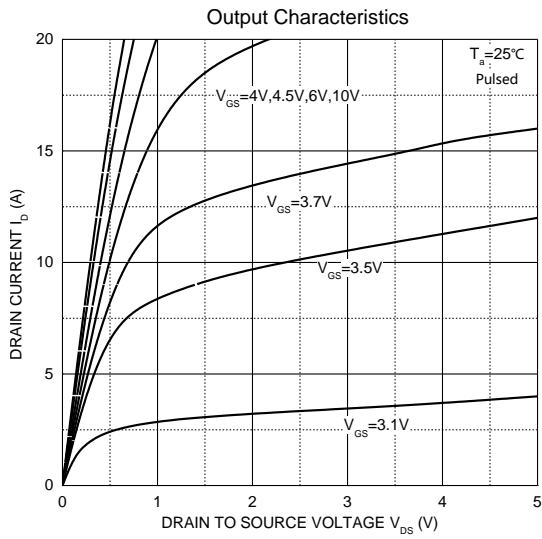
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.7	3.0	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 4.5A$		30	56	m Ω
		$V_{GS} = 6V, I_D = 3A$		31	58	
		$V_{GS} = 4.5V, I_D = 3A$		35	60	
Forward Transconductance	g_{FS}	$V_{DS} = 5V, I_D = 4.5A$		8		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V, f = 1MHz$		950		pF
Output Capacitance	C_{oss}			61		
Reverse Transfer Capacitance	C_{rss}			53		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 30V, V_{GS} = 10V, I_D = 4.5A$		9		nC
Gate-Source Charge	Q_{gs}			3.2		
Gate-Drain Charge	Q_{gd}			4.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 30V, V_{GS} = 10V, R_G = 3\Omega, R_L = 6.7\Omega$		9.4		ns
Turn-On Rise Time	t_r			4.6		
Turn-Off Delay Time	$t_{d(off)}$			20		
Turn-Off Fall Time	t_f			4		
Source-Drain Diode Characteristics						
Continuous Source Current	I_S				4.5	A
Pulsed Source Current	I_{SM}				20	
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 1A$			1.2	V

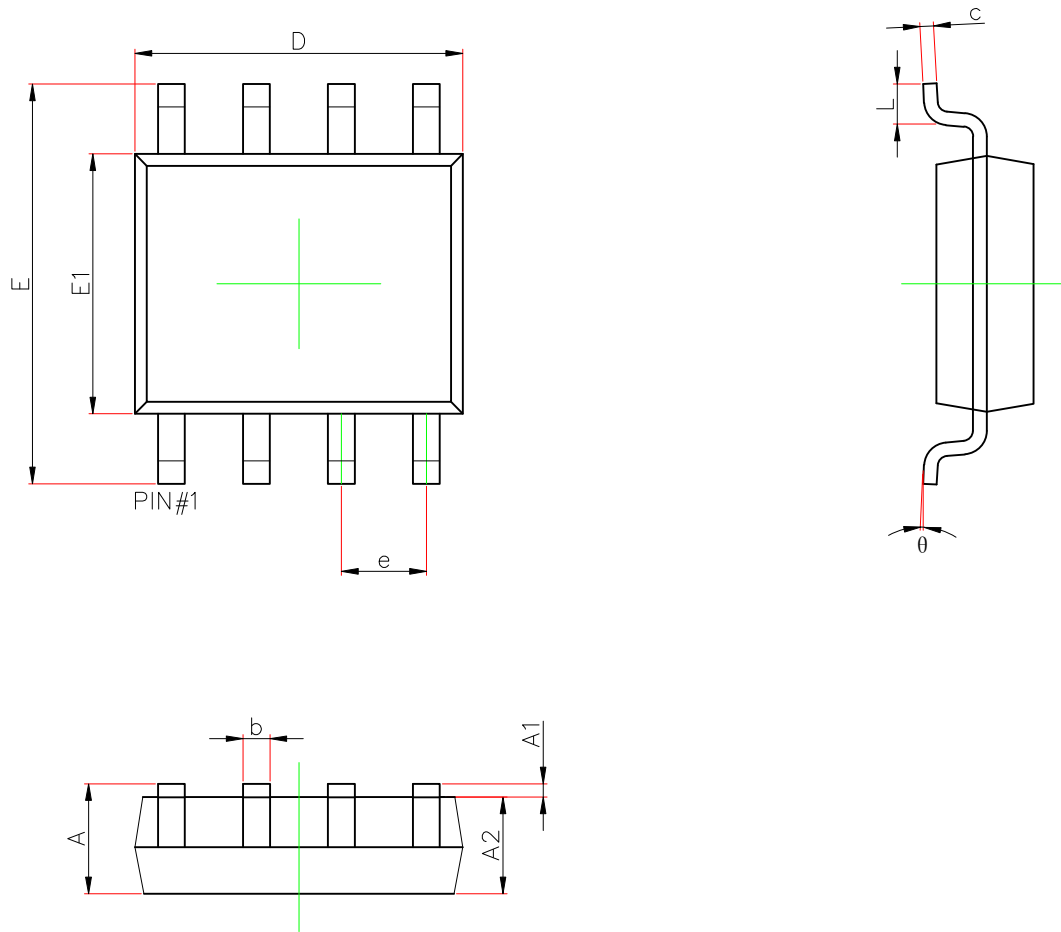
Notes:

- $R_{\theta JA}$ is measured with the device mounted on 1 in² FR4 board with 1oz. single side copper, in a still air environment with $T_A = 25^\circ\text{C}$.
- $R_{\theta JA}$ is measured in the steady state
- Pulse test: Pulse width $\leq 380\mu\text{s}$, duty cycle $\leq 2\%$.
- EAS condition: $V_{DD} = 30V$, $V_{GS} = 10V$, $L = 0.5\text{mH}$, $I_{AS} = 14A$, $R_G = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.

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



SOP-8 Package Outline Dimensions



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	0.156	0.250	0.006	0.010
D	4.700	5.100	0.185	0.201
e	1.270(BSC)		0.050(BSC)	
E	5.800	6.200	0.228	0.244
E1	3.700	4.100	0.146	0.161
L	0.400	1.270	0.016	0.05
θ	0°	8°	0°	8°

NOTICE

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