

General Description

The MY8P04C uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

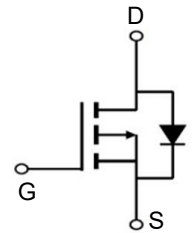
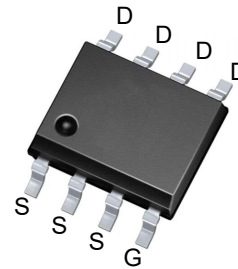


Features

V_{DSS}	-40	V
I_D	-8	A
$R_{DS(ON)}$ (at $V_{GS} = -10V$)	27	$m\Omega$
$R_{DS(ON)}$ (at $V_{GS} = -4.5V$)	38	$m\Omega$

Application

- Battery protection
- Load switch
- Uninterruptible power supply



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY8P04C	SOP-8	MY8P04C	3000

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage ($V_{GS}=0V$)	-40	V
V_{GS}	Gate-Source Voltage ($V_{DS}=0V$)	± 20	V
I_D	Drain Current-Continuous($T_c=25^\circ\text{C}$)	-8	A
	Drain Current-Continuous($T_c=100^\circ\text{C}$)	-6.5	A
$I_{DM (pulse)}$	(Note 1) Drain Current-Continuous@ Current-Pulsed	-20	A
P_D	Maximum Power Dissipation($T_c=25^\circ\text{C}$)	37.5	W
	Maximum Power Dissipation($T_c=100^\circ\text{C}$)	19	W
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 175	$^\circ\text{C}$

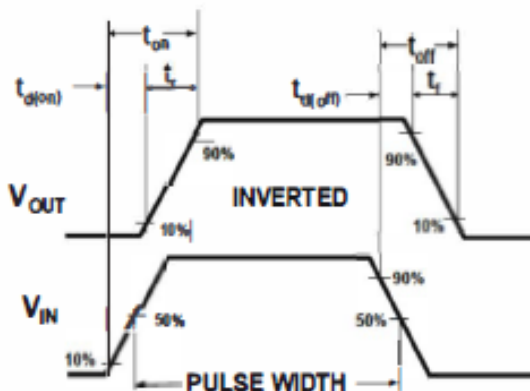
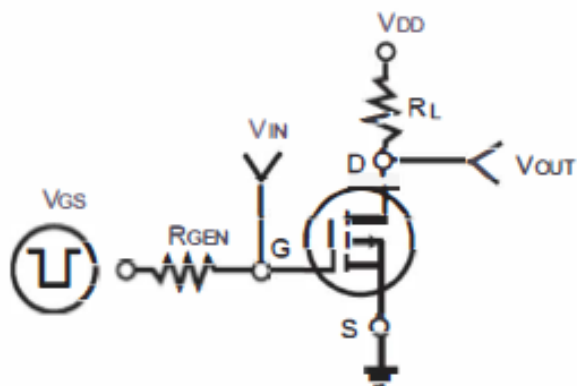
Electrical Characteristics (T_A=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =-250μA	-40			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-40V, V _{GS} =0V			-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V			±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1		-3	V
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-10A		25		S
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-12A		27	35	mΩ
		V _{GS} =-4.5V, I _D =-6A		38	54	mΩ
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1.0MHz		847		pF
C _{oss}	Output Capacitance			125		pF
C _{rss}	Reverse Transfer Capacitance			40		pF
t _{d(on)}	Turn-on Delay Time	V _{GS} =-10V, V _{DS} =-20V, R _L =15 Ω, V _{GEN} =-10V V _{DD} =-15V I _D =1A R _G =6 Ω		35		nS
t _r	Turn-on Rise Time			16		nS
t _{d(off)}	Turn-Off Delay Time			56		nS
t _f	Turn-Off Fall Time			8		nS
Q _g	Total Gate Charge	V _{DS} =-20V, V _{GS} =-10V, I _D =-12A		20		nC
Q _{gs}	Gate-Source Charge	V _{DS} =-20V, V _{GS} =-4.5V, I _D =-12A		2.5		nC
Q _{gd}	Gate-Drain Charge			4.5		nC
I _{SD}	Source-Drain Current(Body Diode)				-20	A
V _{SD}	Forward on Voltage	V _{GS} =0V, I _S =-1.7A		-0.8	-1.2	V

Notes 1.Repetitive Rating: Pulse width limited by maximum junction temperature

Typical Characteristics

Switch Time Test Circuit and Switching Waveforms:



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS (Curves)

Figure1. Power Dissipation

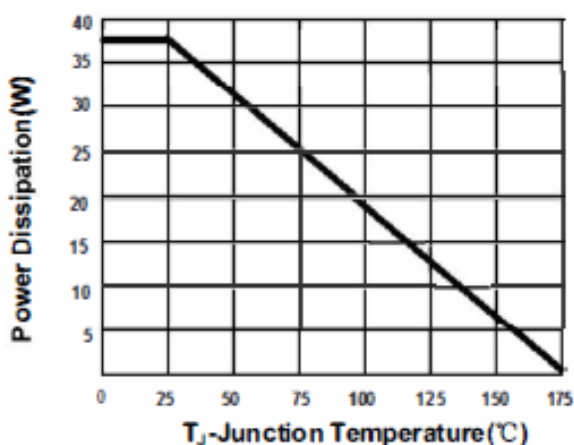


Figure2. Drain Current

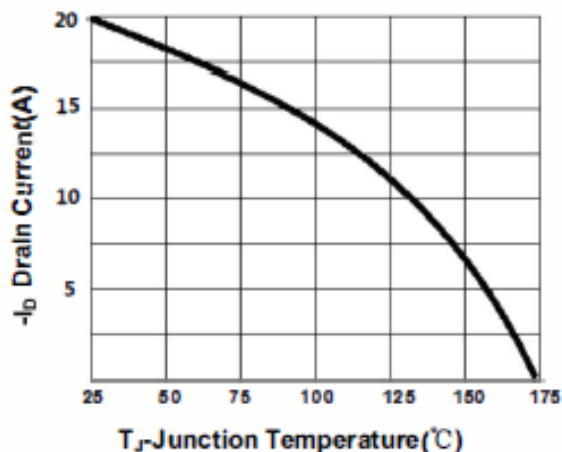


Figure3. Output Characteristics

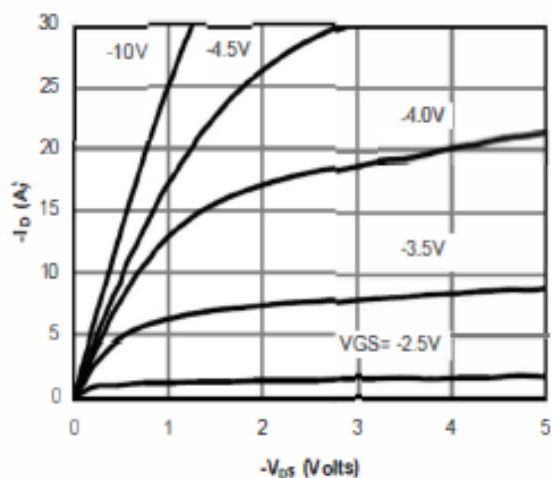


Figure4. Transfer Characteristics

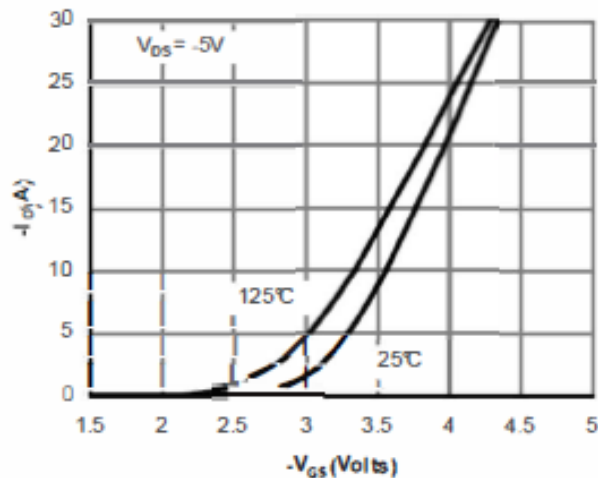


Figure5. Capacitance

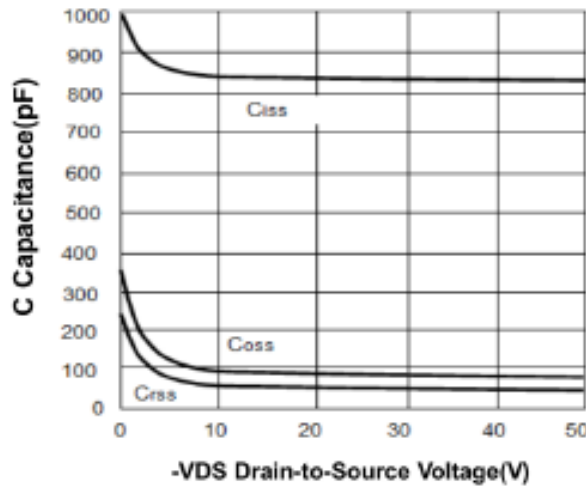


Figure6. $R_{DS(ON)}$ vs Junction Temperature

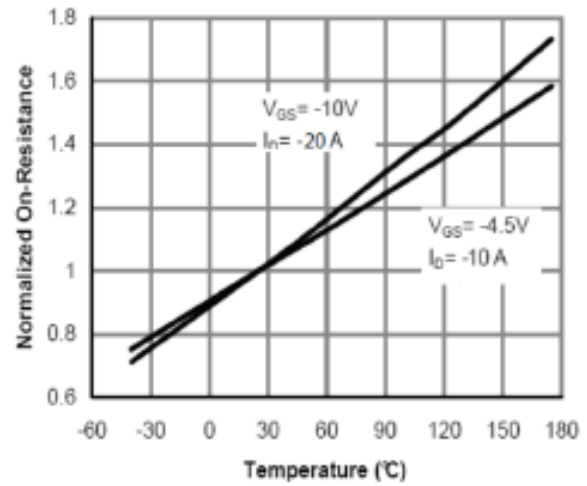


Figure7. $V_{GS(th)}$ vs Junction Temperature

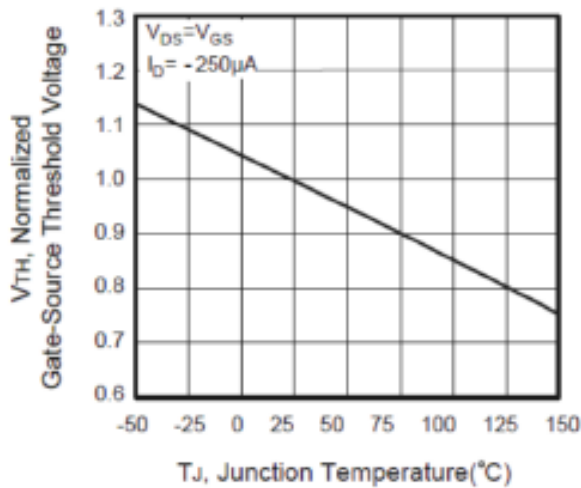


Figure8. Gate Charge Waveforms

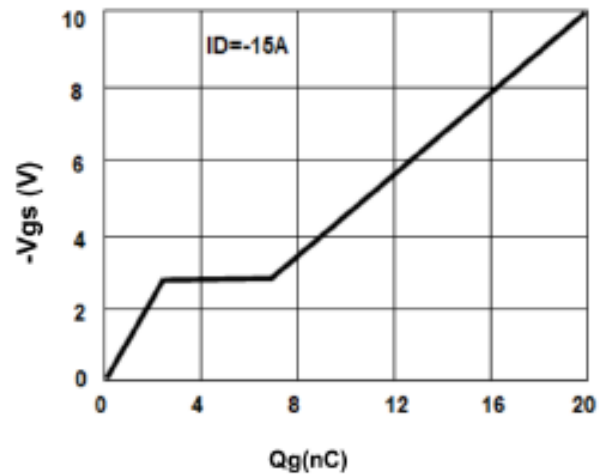
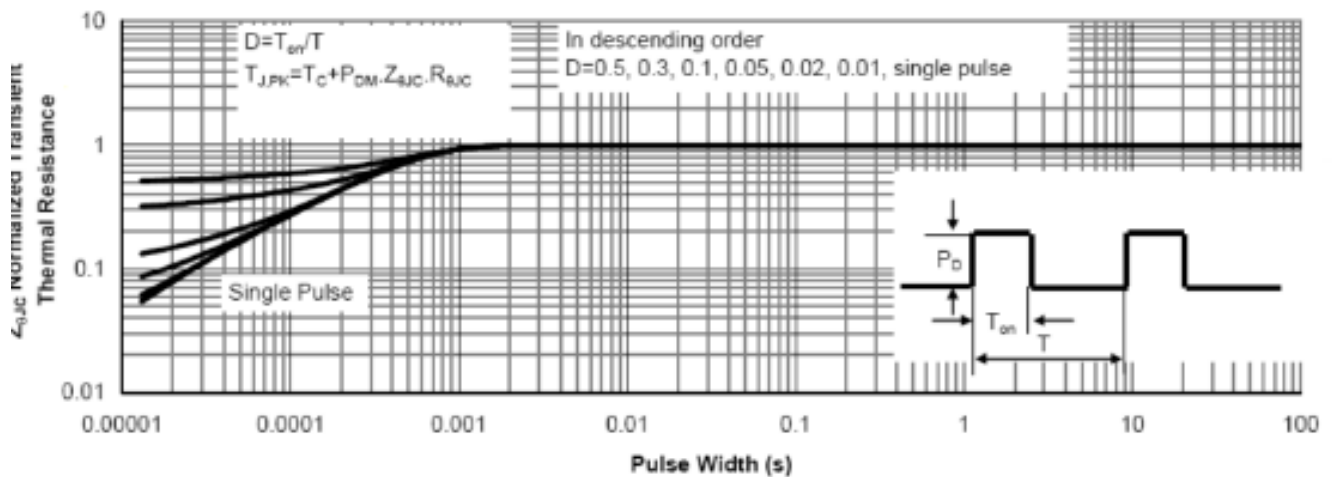
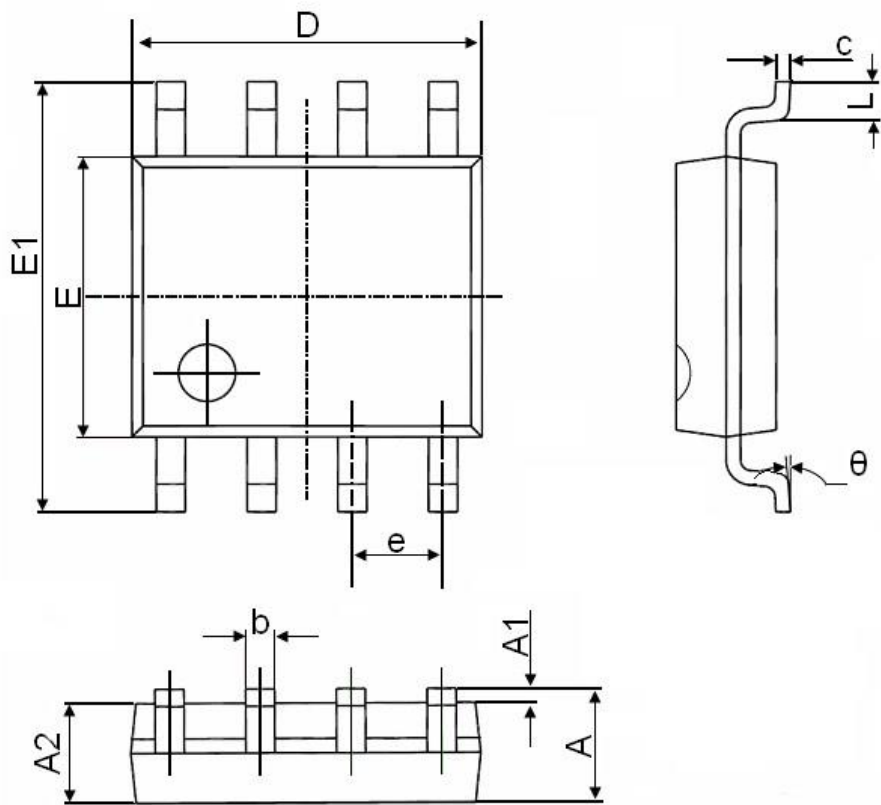


Figure9. Normalized Maximum Transient Thermal Impedance



Package Mechanical Data-SOP-8



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	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050