

General Description

The MY3035Q is the single P-Channel logic enhancement mode power field effect transistors to provide excellent $R_{DS(on)}$, low gate charge and low gate resistance.

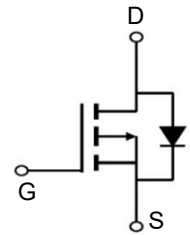
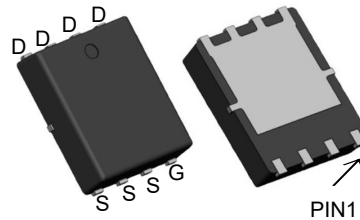


Features

V_{DS}	-30	X
V_{GS}	-35	C
$T_{FUTOP} \text{ (VCI U? 10X+)}$	> 9	o á
$T_{FUTOP} \text{ (VCI U? 4.5X+)}$	> 13	o á

Application

- Battery protection
- Load switch
- Uninterruptible power supply



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY3035Q	PDFN3*3-8L	MY3035Q	5000

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current—Continuous ^a	I_D	$T_C=25^\circ\text{C}$	-35
		$T_C=100^\circ\text{C}$	-22
Drain Current –Pulsed ^a	I_{DM}	-120	A
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	21	W
Power Dissipation – Derate above 25°C		0.17	W/ $^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	62	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	6	$^\circ\text{C}/\text{W}$

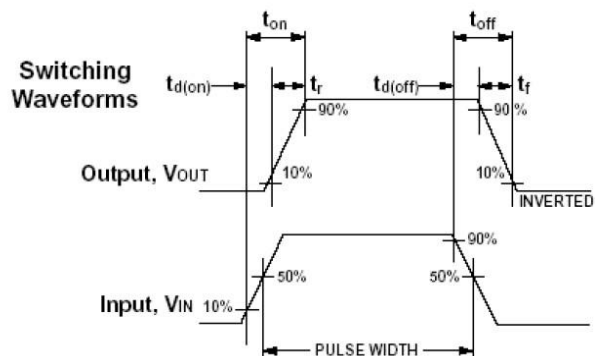
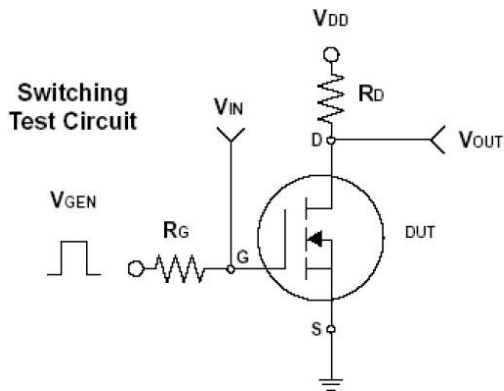
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}, I_D=-250\mu\text{A}$	-30	---	---	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-30\text{V}, V_{GS}=0\text{V}, T_J=25^\circ\text{C}$	---	---	-1	μA
		$V_{DS}=-24\text{V}, V_{GS}=0\text{V}, T_J=100^\circ\text{C}$	---	---	-10	μA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$	---	---	± 100	nA

On Characteristics ^a						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.3	---	-1.8	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-15A$	---	7	9	m Ω
		$V_{GS}=-4.5V, I_D=-9A$	---	10	13	
Forward Transconductance	g_{fs}	$V_{DS}=-10V, I_D=-12A$	---	10.5	---	S
Drain-Source Diode Characteristics ^a						
Continuous Source Current	I_S	$V_G=V_D=0V, \text{Force Current}$	---	---	-30	A
Pulsed Source Current	I_{SM}		---	---	-120	A
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-1.0A, T_J=25^\circ C$	---	---	-1.0	V
Dynamic Characteristics ^b						
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, F=1MHz$	---	1530	2210	pF
Output Capacitance	C_{oss}		---	160	240	
Reverse Transfer Capacitance	C_{rss}		---	105	160	
Switching Characteristics ^b						
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-4.5V, I_D=-12A$	---	14.6	21	nC
Gate-Source Charge	Q_{gs}		---	4.1	6	
Gate-Drain Charge	Q_{gd}		---	6.3	9	
Turn-On Delay Time	$T_{d(on)}$	$V_{DD}=-15V, V_{GS}=-10V, R_G=6\Omega, I_D=-1A$	---	9	17	ns
Rise Time	T_r		---	21.8	41	
Turn-Off Delay Time	$T_{d(off)}$		---	59.8	114	
Fall Time	T_f		---	14.4	27	

Notes: a. Repetitive Rating: Pulsed width limited by maximum junction temperature.
 b. Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
 c. Guaranteed by design, not subject to production testing.

Switching Time Test Circuit and Waveforms



Soldering Methods For Products

1. Storage environment : Temperature=10°C~35°C, Humidity=65%±15%
2. Reflow soldering of surface mount devices

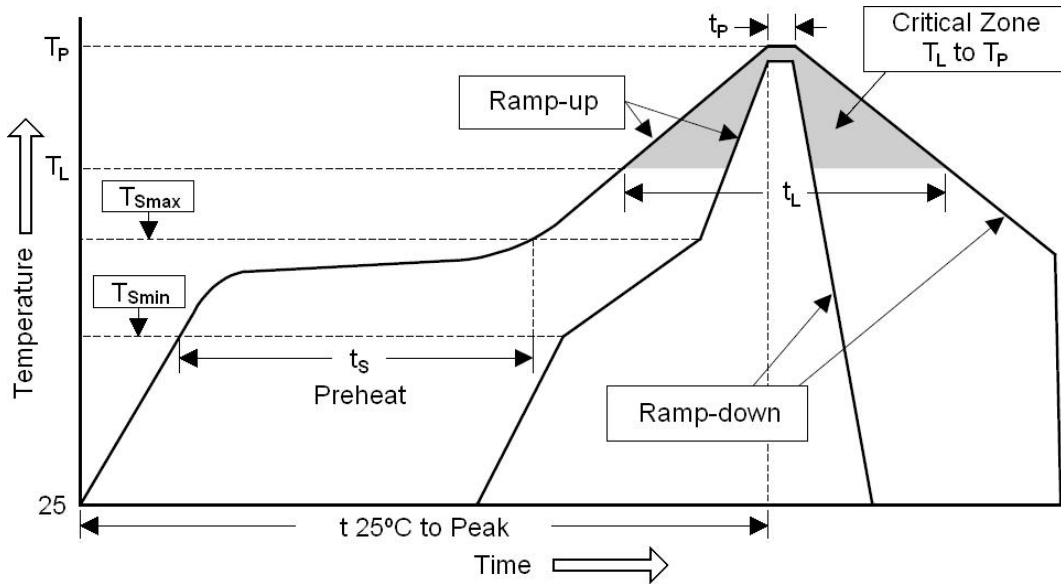


Figure : Temperature Profile

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T _L to T _P)	< 3°C/sec	< 3°C/sec
Preheat		
- Temperature Min (T _{Smin})	100°C	100°C
- Temperature Max (T _{Smax})	150°C	200°C
- Time (Min to Max) (t _s)	60 ~ 120 sec	60 ~ 180 sec
T _{Smax} to T _L		
- Ramp-up rate	< 3°C/sec	< 3°C/sec
Time maintained above:		
- Temperature (T _L)	183°C	217°C
- Time (t _L)	60 ~ 150 sec	60 ~ 150 sec
Peak Temperature (T _P)	240°C +0/-5°C	260°C +0/-5°C
Time within 5°C of actual Peak Temperature (t _p)	10 ~ 30 sec	20 ~ 40 sec
Ramp-down rate	< 6°C/sec	< 6°C/sec
Time 25°C to Peak Temperature	< 6 minutes	< 8 minutes

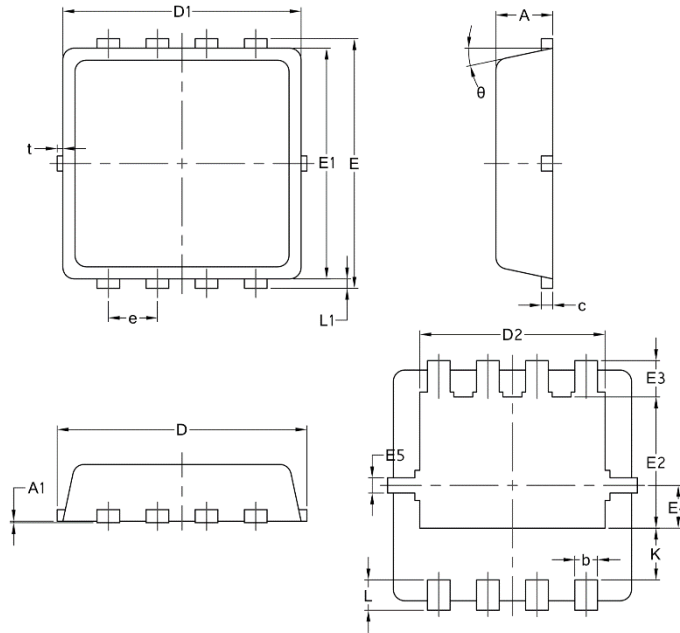
3. Flow (wave) soldering (solder dipping)

Product	Peak Temperature	Dipping Time
Pb devices	245°C ±5°C	5sec ±1sec
Pb-Free devices	260°C +0/-5°C	5sec ±1sec

Notices:

- All companies, brands, logos, pictures, product names and trademarks are the property of owner respective companies.
- 规格书内容、版本或参数规格如有更改恕不另行通知，如有特定规格的需求请事先告知，如因此而造成任何的问题，供应商不承担任何赔偿和法律责任。
- MOS 管电路是静电敏感元器件，且对生产环境要求较严，建议在存放及生产操作时一定要避免静电干扰，经锡炉或回焊炉的温度切勿超过 260 度。

Package Mechanical Data-DFN3*3-8L-JQ Single



Symbol	Common		
	mm		
	Mim	Nom	Max
A	0.70	0.75	0.85
A1	/	/	0.05
b	0.20	0.30	0.40
c	0.10	0.152	0.25
D	3.15	3.30	3.45
D1	3.00	3.15	3.25
D2	2.29	2.45	2.65
E	3.15	3.30	3.45
E1	2.90	3.05	3.20
E2	1.54	1.74	1.94
E3	0.28	0.48	0.65
E4	0.37	0.57	0.77
E5	0.10	0.20	0.30
e	0.60	0.65	0.70
K	0.59	0.69	0.89
L	0.30	0.40	0.50
L1	0.06	0.125	0.20
t	0	0.075	0.13
Φ	10	12	14