

YJQ70G06AQ

- (at $V_{GS}=10V$) 5.5m Ω
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) 9.5m Ω
- 100% EAS Tested

General Description

- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- Part no. with suffix "Q" means AEC-Q101 qualified

Applications

- Power switching application
- Uninterruptible power supply
- DC-DC convertor
- 12V and 24V Automotive systems

■ Absolute Maximum Ratings ($T_A=25$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	60	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_C=25$	I_D	70	A
	$T_C=100$		49	
	$T_A=25$		13	
	$T_A=100$		9.6	
Pulsed Drain Current ^A		I_{DM}	270	A
Avalanche energy ^B		EAS	144	mJ
Total Power Dissipation ^C	$T_C=25$	P_D	96	W
	$T_C=100$		48	
	$T_A=25$		2.9	
	$T_A=100$		1.4	
Thermal Resistance Junction-to-Case	Steady-State	$R_{\theta JC}$	1.56	/W
Thermal Resistance Junction-to-Ambient ^D	Steady-State	$R_{\theta JA}$	51	/W

				QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJQ70G06AQ	F1	Q70G06A	5000	10000	100000	13" reel



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■ Electrical Characteristics (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	60			V
		DS GS=0V			1	μA
		V _{GS} = ±20V, V _{DS} =0V			± 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1	1.7	2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =20A		4.6	5.5	mΩ
		V _{GS} =4.5V, I _D =20A		6.5	9.5	
Diode Forward Voltage	V _{SD}	I _S =20A, V _{GS} =0V		0.8	1.2	V
Gate resistance	R _G	f=1MHz		1.6		Ω

Dynamic Parameters

Output Capacitance	C	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	1000		pF
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Switching Parameters

Total Gate Charge	Q _g		-	38.5	-	
Gate-Source Charge	Q _{gs}	V _{GS} =10V, V _{DS} =30V, I _D =30A	-	9	-	nC
Gate-Drain Charge	Q _{gd}		-	8.2	-	
Reverse Recovery Charge	Q _{rr}	I _S =20A, di/dt=100A/us	-	31.5	-	nC
Reverse Recovery Time	t _r		-	37	-	ns
Turn-on Delay Time	t _{d(on)}					
Turn-on Rise Time	t _r	V _{GS} DD DS	-	54.6	-	
Turn-off Delay Time	t _{d(off)}		-	28	-	
Turn-off Fall Time	t _f			10.5		

B. V_{DD}=30V, V_{GS}=10V, L=1mH, I_{AS}=17A.

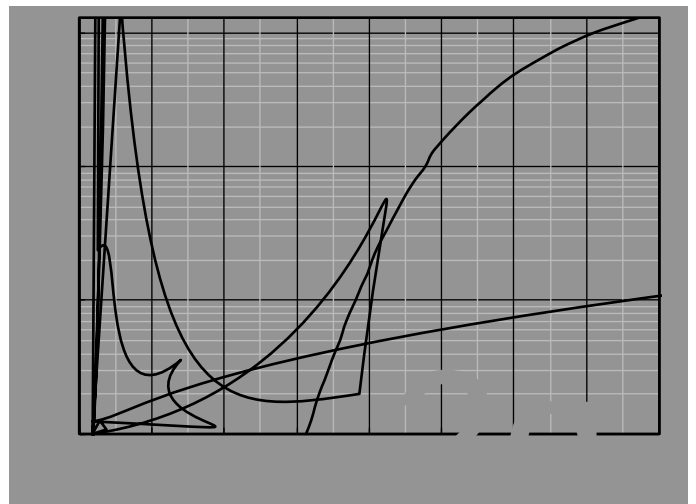
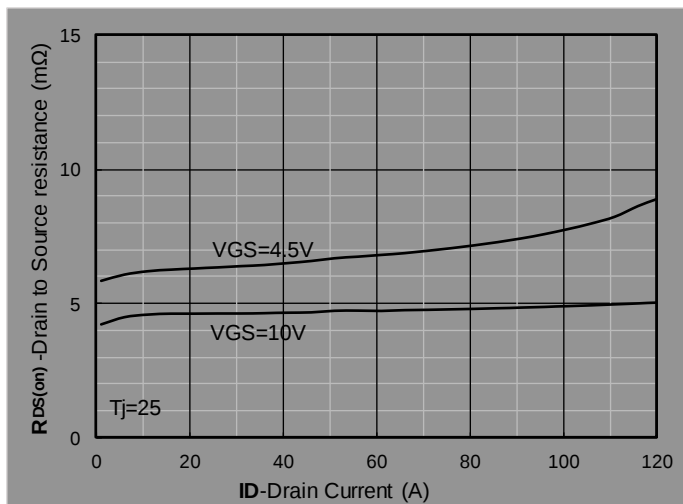
C. P_d is based on max. junction temperature, using junction-case thermal resistance.

D. The value of R_{θJA} is measured with the device mounted on 1 in² FR-4 board with 2oz. Copper, in the still air environment with T_A=25 .

The thermal resistance given in this table depends on the user's specific board design.



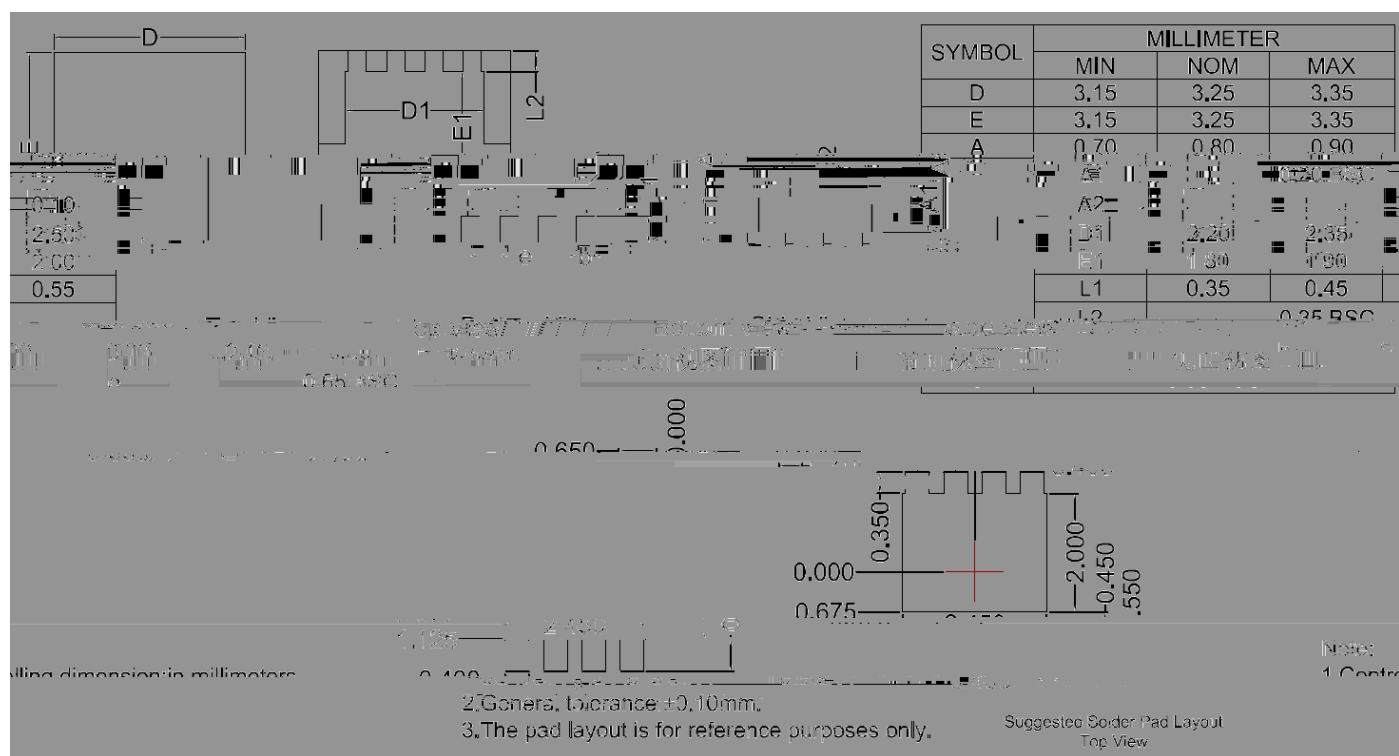
■ Typical Electrical and Thermal Characteristics Diagrams R





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■DFN3333-8L Package information





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