



Si6466ADQ vs. Si6466DQ

Description: N-Channel, 2.5 V (G-S) MOSFET
Package: TSSOP-8
Pin Out: Identical

Part Number Replacements

Si6466ADQ-T1-E3 Replaces Si6466DQ-T1-E3
 Si6466ADQ-T1 Replaces Si6466DQ-T1

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)					
Parameter	Symbol	Si6466ADQ	Si6466DQ	Unit	
Drain-Source Voltage	V_{DS}	20	20	V	
Gate-Source Voltage	V_{GS}	± 8	± 12		
Continuous Drain Current	I_D	$T_A = 25\text{ }^\circ\text{C}$	8.1	7.8	A
		$T_A = 70\text{ }^\circ\text{C}$	6.6	6.2	
Pulsed Drain Current	I_{DM}	30	30		
Continuous Source Current (MOSFET Diode Conduction)	I_S	1.35	1.50		
Power Dissipation	P_D	$T_A = 25\text{ }^\circ\text{C}$	1.5	1.5	W
		$T_A = 70\text{ }^\circ\text{C}$	1.0	1.0	
Operating Junction and Storage Temperature Range	T_j and T_{stg}	- 55 to 150	- 55 to 150	$^\circ\text{C}$	
Maximum Junction-to-Ambient	R_{thJA}	83	83	$^\circ\text{C/W}$	

SPECIFICATIONS ($T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted)								
Parameter	Symbol	Si6466ADQ			Si6466DQ			Unit
		Min	Typ	Max	Min	Typ	Max	
Static								
Gate-Threshold Voltage	$V_{GS(th)}$	0.45			0.6			V
Gate-Body Leakage	I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}			1			1	μA
On-State Drain Current	$I_{D(on)}$	20^1			20			A
Drain-Source On-Resistance	$V_{GS} = 10\text{ V}$	$r_{DS(on)}$						Ω
	$V_{GS} = 4.5\text{ V}$		0.011	0.014		0.0105	0.014	
	$V_{GS} = 2.5\text{ V}$		0.017	0.020		0.0135	0.021	
Forward Transconductance	g_{fs}		30			45		S
Diode Forward Voltage	V_{SD}		0.65	1.1		0.7	1.1	V
Dynamic								
Total Charge	Q_g^2		18	27		34	60	nC
Gate-Source Charge	Q_{gs}		3.2			6.7		
Gate-Drain Charge	Q_{gd}		4			8.1		
Gate Resistance	R_g	0.5		1.8	0.2		1.9	Ω
Switching								
Turn-On Time ³	$t_{d(on)}$		27	45		19	40	ns
	t_r		34	50		30	60	
Turn-Off Time ³	$t_{d(off)}$		76	120		130	250	
	t_f		30	50		40	80	
Source-Drain Reverse Recovery Time	t_{rr}		35	70		50	80	

1. For the Si6466ADQ, $V_{GS} = 4.5\text{ V}$.
2. For the Si6466ADQ, $V_{GS} = 5\text{ V}$. For the Si6466DQ, $V_{GS} = 4.5\text{ V}$.
3. For the Si6466ADQ, $V_{GS} = 4.5\text{ V}$. For the Si6466DQ, $V_{GS} = 10\text{ V}$.

Specification comparisons are supplied as a courtesy to compare two devices and do not constitute a commercial product datasheet or any guarantee of identical performance. Designers should refer to the appropriate datasheets of the same number for guaranteed specification limits.