Si6963BDQ vs. Si6963DQ

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

Part Number Replacements:
Si6963BDQ-T1 Replaces Si6963DQ-T1
Si6963BDQ-T1-E3 (Lead (Pb)-free version) Replaces Si6963DQ-T1-E3 (Lead (Pb)-free version)

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted

Parameter		Symbol	Si6963BDQ	Si6963DQ	Unit
Drain-Source Voltage		V_{DS}	- 20	- 20	V
Gate-Source Voltage		V_{GS}	± 12	± 12	
Continuous Drain Current	T_A = 25 °C	I_D	- 3.9	- 3.5	A
	T_A = 70 °C		- 3.1	- 2.8	
Pulsed Drain Current		I_{DM}	- 30	- 30	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 1.0	- 1.25	
Power Dissipation	T_A = 25 °C	P_D	1.13	1.14	W
	T_A = 70 °C		0.73	0.73	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	110	110	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

Parameter		Symbol	Si6963BDQ			Si6963DQ			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 0.6		- 1.4	- 0.6		- 1.4	V
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			- 1			- 1	µA
On-State Drain Current	V_{GS} = - 4.5 V	$I_{D(on)}$	- 20			- 30			A
Drain-Source On-Resistance	V_{GS} = - 4.5 V	$r_{DS(on)}$		0.036	0.045		0.037	0.050	Ω
	V_{GS} = - 2.5 V			0.065	0.080		0.062	0.085	
Forward Transconductance		g_{fs}		10			10		S
Diode Forward Voltage		V_{SD}		- 0.71	- 1.1		- 0.72	- 1.2	V
Dynamic									
Total Gate Charge		Q_g		8.6	11		12.5	20	nC
Gate-Source Charge		Q_{gs}		1.2			1.9		
Gate-Drain Charge		Q_{gd}		2.8			3.2		
Gate Resistance		R_g		7			NS		Ω
Switching									
Turn-On Time		$t_{d(on)}$		33	50		20	30	ns
		t_r		57	90		26	40	
Turn-Off Time		$t_{d(off)}$		65	100		48	75	
		t_f		40	60		30	45	
Source-Drain Reverse Recovery Time		t_{rr}		30	50		30	50	

NS denotes parameter not specified.

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.