Si6969BDQ vs. Si6969DQ

Description: **P-Channel, 1.8 V (G-S) MOSFET**
Package: **TSSOP-8**
Pin Out: **Identical**

Part Number Replacements:
Si6969BDQ-T1 Replaces Si6969DQ-T1
Si6969BDQ-T1-E3 (Lead (Pb)-free version) Replaces Si6969DQ-T1

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

Parameter		Symbol	Si6969BDQ	Si6969DQ	Unit
Drain-Source Voltage		V_{DS}	- 12	- 12	V
Gate-Source Voltage		V_{GS}	± 8	± 8	
Continuous Drain Current	T_A = 25 °C	I_D	- 4.6	- 4.6	A
	T_A = 70 °C		- 3.8	- 3.8	
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	1.14	1.1	W
	T_A = 70 °C		0.73	0.72	
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	Si6969BDQ			Si6969DQ			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 0.45		- 0.8	- 0.45			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	$I_{D(on)}$	- 30			- 30			A
Drain-Source On-Resistance	V_{GS} = - 4.5 V	$r_{DS(on)}$		0.024	0.030		0.027	0.034	Ω
	V_{GS} = - 2.5 V			0.031	0.040		0.037	0.050	
	V_{GS} = - 1.8 V			0.044	0.055		0.053	0.075	
Forward Transconductance		g_{fs}		18			18		S
Diode Forward Voltage		V_{SD}		- 0.68	- 1.1		- 0.68	- 1.1	V
Dynamic									
Total Gate Charge		Q_g		16.5	25		21	40	nC
Gate-Source Charge		Q_{gs}		2			4.5		
Gate-Drain Charge		Q_{gd}		4.7			3.5		
Switching									
Turn-On Time		$t_{d(on)}$		35	40		25	50	ns
		t_r		35	60		35	60	
Turn-Off Time		$t_{d(off)}$		110	180		80	150	
		t_f		90	150		40	80	
Source-Drain Reverse Recovery Time		t_{rr}		100	200		50	100	

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.