Si5404BDC vs. Si5404DC

Description: **N-Channel, 2.5-V (G-S) MOSFET**
Package: **1206-8 ChipFET®**
Pin Out: **Identical**

Part Number Replacements:

Si5404BDC-T1 Replaces Si5404DC-T1
Si5404BDC-T1—E3 (Lead (Pb)-Free version) Replaces Si5404DC-T1—E3

Summary of Performance:

The Si5404BDC is the replacement for the original Si5404DC; both parts perform identically including limits to the parametric tables below.

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)

Parameter		Symbol	Si5404BDC	Si5404DC	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	7.5	7.2	A
	T_A = 70°C		5.4	5.2	
Pulsed Drain Current		I_{DM}	20	20	
Continuous Source Current (MOSFET Diode Conduction)		I_S	2.1	2.1	
Power Dissipation	T_A = 25°C	P_D	2.5	2.5	W
	T_A = 70°C		1.3	1.3	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	–55 to 150	–55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	50	50	°C/W

SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED)

Parameter		Symbol	Si5404BDC			Si5404DC			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	0.6		1.5	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	V_{GS} = 4.5 V	$I_{D(on)}$	20			20			A
Drain-Source On-Resistance	V_{GS} = 4.5 V	$r_{DS(on)}$		0.022	0.028		0.016	0.019	Ω
	V_{GS} = 2.5 V			0.031	0.039		0.038	0.045	
Forward Transconductance		g_{fs}		26			20		S
Diode Forward Voltage		V_{SD}		0.7			0.8	1.2	V
Dynamic									
Total Gate Charge		Q_g		7	11		12	18	nC
Gate-Source Charge		Q_{gs}		1.7			2.4		
Gate-Drain Charge		Q_{gd}		2			3.2		
Gate Resistance		R_g		1.7			NS*		Ω
Switching									
Turn-On Time		$t_{d(on)}$		12	20		20	30	ns
		t_r		12	20		40	60	
Turn-Off Time		$t_{d(off)}$		25	40		40	60	
		t_f		10	20		15	23	
Source-Drain Reverse Recovery Time		t_{rr}		20	40		30	60	

*NS denotes parameter not specified in original data sheet.