



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	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	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	I _{D(on)}	20			20			A
Drain-Source On-Resistance	V _{GS} = 4.5 V		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.