



## Si5402BDC vs. Si5402DC

**Description:** N-Channel, 30-V (D-S) MOSFET  
**Package:** 1206-8 ChipFET®  
**Pin Out:** Identical

**Part Number Replacements:**

Si5402BDC-T1-E3 Replaces Si5402DC-T1-E3  
 Si5402BDC-T1-E3 Replaces Si5402DC-T1

**Summary of Performance:**

The Si5402BDC is the replacement to the original Si5402DC; both parts perform identically, including limits to the parametric tables below.

ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	Si5402BDC	Si5402DC	Unit
Drain-Source Voltage		V <sub>DS</sub>	30	30	V
Gate-Source Voltage		V <sub>GS</sub>	±20	±20	
Continuous Drain Current	T <sub>A</sub> = 25°C	I <sub>D</sub>	6.7	6.7	A
	T <sub>A</sub> = 70°C		4.8	4.8	
Pulsed Drain Current		I <sub>DM</sub>	20	20	
Continuous Source Current (MOSFET Diode Conduction)		I <sub>S</sub>	2.1	2.1	
Power Dissipation	T <sub>A</sub> = 25°C	P <sub>D</sub>	2.5	2.5	W
	T <sub>A</sub> = 70°C		1.3	1.3	
Operating Junction & Storage Temperature Range		T <sub>J</sub> & T <sub>stg</sub>	-55 to 150	-55 to 150	°C
Maximum Junction-to-Ambient		R <sub>thJA</sub>	50	50	°C/W

SPECIFICATIONS (T <sub>J</sub> = 25°C UNLESS OTHERWISE NOTED)									
Parameter	Symbol	Si5402BDC			Si5402DC			Unit	
		Min	Typ	Max	Min	Typ	Max		
<b>Static</b>									
Gate-Threshold Voltage	V <sub>GS(th)</sub>	1.0		3.0	1.0		NS	V	
Gate-Body Leakage	I <sub>GSS</sub>			±100			±100	nA	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>			-1			-1	µA	
On-State Drain Current	V <sub>GS</sub> = 10 V	I <sub>D(on)</sub>	20		20			A	
Drain-Source On-Resistance	V <sub>GS</sub> = 10 V	r <sub>DS(on)</sub>		0.029	0.035		0.030	0.035	Ω
	V <sub>GS</sub> = 4.5 V			0.035	0.042		0.045	0.055	
Forward Transconductance		g <sub>fs</sub>		19			15	S	
Diode Forward Voltage		V <sub>SD</sub>		0.8	1.2		0.8	1.2	V
<b>Dynamic</b>									
Total Gate Charge		Q <sub>g</sub>		10	20		13	20	nC
Gate-Source Charge		Q <sub>gs</sub>		1.9			1.3		
Gate-Drain Charge		Q <sub>gd</sub>		1.6			3.1		
Gate Resistance		R <sub>g</sub>		14			NS		Ω
<b>Switching</b>									
Turn-On Time		t <sub>d(on)</sub>		10	15		10	15	ns
		t <sub>r</sub>		10	15		10	15	
Turn-Off Time		t <sub>d(off)</sub>		27	40		25	40	
		t <sub>f</sub>		10	15		10	15	
Source-Drain Reverse Recovery Time		t <sub>rr</sub>		20	60		30	60	