Si5504BDC vs. Si5504DC

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

Part Number Replacements
Si5504BDC-T1-E3 Replaces Si5504DC-T1-E3
Si5504BDC-T1-E3 Replaces Si5504DC-T1

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

Parameter		Symbol		Si5504BDC	Si5504DC	Unit
Drain-Source Voltage		V_{DS}	N-Ch	30	30	V
			P-Ch	- 30	- 30	
Gate-Source Voltage		V_{GS}	N-Ch	± 20	± 20	
			P-Ch			
Continuous Drain Current	T_A = 25 °C	I_D	N-Ch	3.7	3.9	A
			P-Ch	- 2.5	- 2.8	
	T_A = 85 °C		N-Ch	2.6	2.8	
			P-Ch	- 1.8	- 2.0	
Pulsed Drain Current		I_{DM}	N-Ch	10	10	
			P-Ch	- 10	- 10	
Continuous Source Current (MOSFET Diode Conduction)		I_S	N-Ch	1.3	1.8	
			P-Ch	- 1.3	- 1.8	
Power Dissipation	T_A = 25 °C	P_D		1.5	2.1	W
	T_A = 85 °C			0.8	1.1	
Operating Junction and Storage Temperature Range		T_j and T_{stg}		- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}		85	60	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)

Parameter		Symbol		Si5504BDC			Si5504DC			Unit
				Min	Typ	Max	Min	Typ	Max	
Static										
Gate-Threshold Voltage		$V_{GS(th)}$	N-Ch	1.5		3	1.0		NS[a]	V
			P-Ch	- 1.5		- 3	- 1.0		NS[a]	
Gate-Body Leakage		I_{GSS}	N-Ch			± 100			± 100	nA
			P-Ch			± 100			± 100	
Zero Gate Voltage Drain Current		I_{DSS}	N-Ch			1			1	µA
			P-Ch			- 1			- 1	
On-State Drain Current	V_{GS} = 10 V	$I_{D(on)}$	N-Ch	10			10			A
	V_{GS} = - 10 V		P-Ch	- 10			-10			
Drain-Source On-Resistance	V_{GS} = 10 V	$r_{DS(on)}$	N-Ch		0.053	0.065		0.072	0.085	Ω
	V_{GS} = - 10 V		P-Ch		0.112	0.140		0.137	0.165	
	V_{GS} = 4.5 V		N-Ch		0.081	0.100		0.120	0.143	
	V_{GS} = - 4.5 V		P-Ch		0.188	0.235		0.240	0.290	
Forward Transconductance		g_{fs}	N-Ch		5			6		S
			P-Ch		3.5			3		
Diode Forward Voltage		V_{SD}	N-Ch		0.8	1.2		0.8	1.2	V
			P-Ch		- 0.8	- 1.2		- 0.8	- 1.2	
Dynamic										
Total Gate Charge		Q_g	N-Ch		4.5	7		5	7.5	nC
			P-Ch		4.5	7		5.5	6.6	
Gate-Source Charge		Q_{gs}	N-Ch		0.7			0.8		
			P-Ch		0.7			1.2		
Gate-Drain Charge		Q_{gd}	N-Ch		0.7			1.0		
			P-Ch		1			0.9		
Gate Resistance		R_g	N-Ch		3			NS		Ω
			P-Ch		13			NS		

Notes:
a. NS denotes not specified in original datasheet.

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.