Si5515CDC vs. Si5515DC

Description: **N- and P-Channel, 20-V (D-S) MOSFET**
Package: **1206-8 ChipFET®**
Pin Out: **Identical**

Part Number Replacements: Si5515CDC-T1-E3 replaces Si5515DC-T1-E3

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted						
PARAMETER		**SYMBOL**		**Si5515CDC**	**Si5515DC**	**UNIT**
Drain-Source Voltage		V_{DS}	N-Ch	20	20	V
			P-Ch	- 20	- 20	
Gate-Source Voltage		V_{GS}	N-Ch	± 8	± 8	
			P-Ch			
Continuous Drain Current	T_A = 25 °C	I_D	N-Ch	4	5.9	A
			P-Ch	- 3.1	- 4.1	
	T_A = 70 °C[a]		N-Ch	4	4.2	
			P-Ch	- 2.5	- 2.9	
Pulsed Drain Current		I_{DM}	N-Ch	20	20	
			P-Ch	- 10	- 15	
Continuous Source Current (MOSFET Diode Conduction)		I_S	N-Ch	1.7	1.8	
			P-Ch	- 1.7	- 1.8	
Power Dissipation	T_A = 25 °C	P_D		2.1	2.1	W
	T_A = 85 °C			1.3	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}	N-Ch	60	60	°C/W
			P-Ch	95		

Note
a. T_A = 85 °C for Si5515DC

SPECIFICATIONS T_J = 25 °C, unless otherwise noted										
				Si5515CDC			**Si5515DC**			
PARAMETER		**SYMBOL**		**MIN.**	**TYP.**	**MAX.**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Static										
Gate-Threshold Voltage		$V_{GS(th)}$	N-Ch	0.4		0.8	0.4		1.0	V
			P-Ch	- 0.4		- 0.8	- 0.4		- 1.0	
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} = 4.5 V	$I_{D(on)}$	N-Ch	20			20			A
	V_{GS} = - 4.5 V		P-Ch	- 10			- 15			
Drain-Source On-Resistance	V_{GS} = 4.5 V	$R_{DS(on)}$	N-Ch		0.030	0.036		0.032	0.040	Ω
	V_{GS} = - 4.5 V		P-Ch		0.083	0.100		0.069	0.086	
	V_{GS} = 2.5 V		N-Ch		0.034	0.041		0.036	0.045	
	V_{GS} = - 2.5 V		P-Ch		0.100	0.120		0.097	0.121	
	V_{GS} = 1.8 V		N-Ch		0.040	0.050		0.042	0.052	
	V_{GS} = - 1.8 V		P-Ch		0.130	0.156		0.137	0.171	
Forward Transconductance		g_{fs}	N-Ch		22.4			22		S
			P-Ch		9.5			8		
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	

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
			Si5515CDC			Si5515DC			
PARAMETER	**SYMBOL**		**MIN.**	**TYP.**	**MAX.**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Dynamic									
Total Gate Charge	Q_g	N-Ch		6.5	9.8		5	7.5	nC
		P-Ch		6.2	9.3		5.5	8.5	
Gate-Source Charge	Q_{gs}	N-Ch		1.1			0.85		
		P-Ch		0.85			0.91		
Gate-Drain Charge	Q_{gd}	N-Ch		0.9			1.0		
		P-Ch		1.75			1.6		
Gate Resistance	R_g	N-Ch	0.66	3.3	6.6		NS		Ω
		P-Ch	1.22	6.1	12.2		NS		

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.