Si5406CDC vs. Si5406DC

Description: **N-Channel, 12-V (D-S) MOSFET**
Package: **1206-8 ChipFET®**
Pin Out: **Identical**

Part Number Replacements: Si5406CDC-T1-GE3 replaces Si5406DC-T1-E3
Si5406CDC-T1-GE3 replaces Si5406DC-T1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
PARAMETER		**SYMBOL**	**Si5406CDC**	**Si5406DC**	**UNIT**
Drain-Source Voltage		V_{DS}	12	12	V
Gate-Source Voltage		V_{GS}	± 8	± 8	
Continuous Drain Current	T_A = 25 °C	I_D	6.0	9.5	A
	T_A = 85 °C		6.0	6.8	
Pulsed Drain Current		I_{DM}	20	20	
Continuous Source Current (MOSFET Diode Conduction)		I_S	1.9	2.1	
Power Dissipation	T_A = 25 °C	P_D	2.3	2.5	W
	T_A = 85 °C		1.2	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}	55	50	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
PARAMETER		**SYMBOL**	**Si5406CDC**			**Si5406DC**			**UNIT**
			MIN.	**TYP.**	**MAX.**	**MIN.**	**TYP.**	**MAX.**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	0.4		1.0	0.6		NS	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	$R_{DS(on)}$		0.016	0.020		0.017	0.020	Ω
	V_{GS} = 2.5 V			0.018	0.023		0.021	0.025	
	V_{GS} = 1.8 V			0.021	0.027		NS	NS	
Forward Transconductance		g_{fs}		30			30		S
Diode Forward Voltage		V_{SD}		0.8	1.2		0.7	1.2	V
Dynamic									
Total Gate Charge		Q_g		11.5	18		13.7	20	nC
Gate-Source Charge		Q_{gs}		1			2.3		
Gate-Drain Charge		Q_{gd}		2			4.1		
Gate Resistance		R_g		2.2			NS		Ω
Switching									
Turn-On Time		$t_{d(on)}$		10	20		17	25	ns
		t_r		10	15		46	70	
Turn-Off Time		$t_{d(off)}$		45	70		54	80	
		t_f		20	30		29	45	
Source-Drain Reverse Recovery Time		t_{rr}		25	40		35	70	

Note

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.