



Si5853CDC vs. Si5853DC

Description: P-Channel, 20-V (D-S) MOSFET with Schottky Diode

Package: 1206-8 ChipFET®

Pin Out: Identical

Part Number Replacements: Si5853CDC-T1-E3 replaces Si5853DC-T1-E3
Si5853CDC-T1-E3 replaces Si5853DC-T1

ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted					
PARAMETER	SYMBOL	Si5853CDC	Si5853DC	UNIT	
Drain-Source Voltage	V_{DS}	- 20	- 20	V	
Gate-Source Voltage	V_{GS}	± 8	± 8		
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	- 2.9	- 3.6	A
	$T_A = 85\text{ }^\circ\text{C}$		- 2.3 ^a	- 2.6	
Pulsed Drain Current	I_{DM}	- 10	- 10		
Continuous Source Current (MOSFET Diode Conduction)	I_S	- 1.2	- 1.8		
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	1.5	2.1	W
	$T_A = 85\text{ }^\circ\text{C}$		0.9 ^a	1.1	
Operating Junction and Storage Temperature Range	T_J and T_{stg}	- 55 to 150	- 55 to 150	$^\circ\text{C}$	
Maximum Junction-to-Ambient	R_{thJA}	85	60	$^\circ\text{C/W}$	

SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted								
PARAMETER	SYMBOL	Si5853CDC			Si5853DC			UNIT
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Static								
Gate-Threshold Voltage	$V_{GS(th)}$	- 0.45		- 1.0	- 0.45		- 1.0	V
Gate-Body Leakage	I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}			- 1			- 1	μA
On-State Drain Current	$V_{GS} = - 4.5\text{ V}$ $I_{D(on)}$	- 10			- 10			A
Drain-Source On-Resistance	$V_{GS} = - 4.5\text{ V}$ $r_{DS(on)}$		0.086	0.104		0.095	0.110	Ω
	$V_{GS} = - 2.5\text{ V}$		0.120	0.144		0.137	0.160	
	$V_{GS} = - 1.8\text{ V}$		0.170	0.205		0.205	0.240	
Forward Transconductance	g_{fs}		6			7		S
Diode Forward Voltage	V_{SD}		- 0.9	- 1.2		- 0.8	- 1.2	V
Dynamic								
Total Gate Charge	Q_g		4.2	6.5		5.1	7.7	nC
Gate-Source Charge	Q_{gs}		0.7			1.2		
Gate-Drain Charge	Q_{gd}		1			1.0		
Gate Resistance	R_g		6.2			NS		

SCHOTTKY SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted								
PARAMETER	SYMBOL	Si5853CDC			Si5853DC			UNIT
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Static								
Forward Voltage Drop	V_F		0.381	0.46		0.42	0.48	V
Maximum Reverse Leakage Current	I_{rm}		0.0093	0.09		0.002	0.100	mA
Junction Capacitance	C_T		30			31		pF

Note

NS denotes not specified in original datasheet
a. $T_A = 70\text{ }^\circ\text{C}$, not $85\text{ }^\circ\text{C}$

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.