



Si1013CX vs. Si1013X

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

Package: SC89-3

Pin Out: Identical

Part Number Replacements: Si1013CX-T1-GE3 replaces Si1013X-T1-GE3

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)				
PARAMETER	SYMBOL	Si1013CX	Si1013X	UNIT
Drain-Source Voltage	V_{DS}	- 20	- 20	V
Gate-Source Voltage	V_{GS}	± 8	± 6	
Continuous Drain Current	I_D	$T_A = 25\text{ }^\circ\text{C}$	- 0.45	- 0.40
		$T_A = 70\text{ }^\circ\text{C}^{(1)}$	- 0.36	- 0.30 ⁽¹⁾
Pulsed Drain Current	I_{DM}	- 1.5	- 1	A
Continuous Source Current (MOSFET Diode Conduction)	I_S	- 0.160	- 0.275	
Power Dissipation	P_D	$T_A = 25\text{ }^\circ\text{C}$	0.190	0.275
		$T_A = 70\text{ }^\circ\text{C}^{(1)}$	0.120	0.160 ⁽¹⁾
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to 150	- 55 to 150	$^\circ\text{C}$
Maximum Junction-to-Ambient	R_{thJA}	530	NS	$^\circ\text{C}/\text{W}$

SPECIFICATIONS ($T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted)									
PARAMETER	SYMBOL	Si1013CX ⁽¹⁾			Si1013X ⁽¹⁾			UNIT	
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Static									
Gate-Threshold Voltage	$V_{GS(th)}$	- 0.4	-	- 1	- 0.45	-	NS	V	
Gate-Body Leakage	I_{GSS}	-	-	± 30	-	± 1	± 2	μA	
Zero Gate Voltage Drain Current	I_{DSS}	-	-	- 1	-	-	- 0.1		
On-State Drain Current	$V_{GS} = - 4.5\text{ V}$ $I_{D(on)}$	- 1.5	-	-	- 0.7	-	-	A	
Drain-Source On-Resistance	$V_{GS} = - 4.5\text{ V}$	$R_{DS(on)}$	-	0.630	0.760	-	0.8	1.2	Ω
	$V_{GS} = - 2.5\text{ V}$		-	0.865	1.040	-	1.2	1.6	
	$V_{GS} = - 1.8\text{ V}$		-	1.200	1.500	-	1.8	2.7	
Forward Transconductance	g_{fs}	-	1	-	-	0.4	-	S	
Diode Forward Voltage	V_{SD}	-	- 0.8	- 1.2	-	- 0.8	- 1.2	V	
Dynamic									
Gate Charge	Q_g	-	1.65	2.50	-	1.5	NS	nC	
Gate-Source Charge	Q_{gs}	-	0.2	-	-	0.15	-		
Gate-Drain Charge	Q_{gd}	-	0.26	-	-	0.45	-		
Gate Resistance	R_g	2.4	12	24	-	NS	-	Ω	

Note⁽¹⁾ $T_A = 85\text{ }^\circ\text{C}$

- NS denotes not specified in the 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.