Si1300BDL vs. Si1300DL

Description: **N-Channel, 2.5 V (G-S) MOSFET**
Package: **SC70-3**
Pin Out: **Identical**

Part Number Replacements:
Si1300BDL-T1-E3 Replaces Si1300DL-T1-E3
Si1300BDL-T1-E3 Replaces Si1300DL-T1

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

Parameter		Symbol	Si1300BDL	Si1300DL	Unit
Drain-Source Voltage		V_{DS}	20	20	V
Gate-Source Voltage		V_{GS}	± 8	± 8	
Continuous Drain Current	T_A = 25 °C	I_D	0.37	0.25	A
	T_A = 70 °C		0.30	0.20	
Pulsed Drain Current		I_{DM}	0.5	0.5	
Continuous Source Current (MOSFET Diode Conduction)		I_S	0.14	0.28	
Power Dissipation	T_A = 25 °C	P_D	0.19	0.15	W
	T_A = 70 °C		0.12	0.10	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	670	833	°C/W

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

Parameter		Symbol	Si1300BDL			Si1300DL			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	0.4		1.0	0.4	0.9	1.5	V
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			0.1			0.1	µA
On-State Drain Current	V_{GS} = 4.5 V	$I_{D(on)}$	0.4			0.4			A
	V_{GS} = 2.5 V		0.12			0.12			
Drain-Source On-Resistance	V_{GS} = 4.5 V	$r_{DS(on)}$		0.65	0.85		1.6	2.0	Ω
	V_{GS} = 2.5 V			0.85	1.08		1.2	2.5	
Forward Transconductance		g_{fs}		NS			0.2		S
Diode Forward Voltage		V_{SD}		0.7	1.2		0.7	1.2	V
Dynamic									
Total Gate Charge		Q_g		0.560	0.840		0.35	0.45	nC
Gate-Source Charge		Q_{gs}		0.098			0.025		
Gate-Drain Charge		Q_{gd}		0.085			0.1		
Gate Resistance		R_g		7	12		NS		Ω
Switching									
Turn-On Time*		$t_{d(on)}$		7	12		7	12	ns
		t_r		10	15		25	35	
Turn-Off Time*		$t_{d(off)}$		8	13		19	30	
		t_f		7	12		9	15	

*NS denotes not specified

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.