



Si1539CDL vs. Si1539DL

Description: N- and P-Channel, 30 V (D-S) MOSFETs

Package: SC-70

Pin Out: Identical

Part Number Replacements: Si1539CDL-T1-GE3 replaces Si1539DL-T1-E3
Si1539CDL-T1-GE3 replaces Si1539DL-T1-GE3

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)					
PARAMETER		SYMBOL	Si1539CDL	Si1539DL	UNIT
Drain-Source Voltage		V_{DS}	N-CH	30	V
			P-CH	- 30	
Gate-Source Voltage		V_{GS}	N-CH	± 20	V
			P-CH		
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	N-CH	0.70	A
			P-CH	- 0.40	
	$T_A = 70\text{ }^\circ\text{C}$		N-CH	0.50	
			P-CH	- 0.40	
Pulsed Drain Current		I_{DM}	N-CH	2	1
			P-CH	- 1	
Continuous Source Current (MOSFET Diode Conduction)		I_S	N-CH	2.2	0.25
			P-CH	- 1.8	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D		0.29	W
	$T_A = 70\text{ }^\circ\text{C}$			0.18	
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}	438	415	$^\circ\text{C/W}$

SPECIFICATIONS ($T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted)										
PARAMETER	SYMBOL		Si1539CDL			Si1539DL			UNIT	
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Static										
Gate-Threshold Voltage	$V_{GS(th)}$	N-CH	1.2		2.5	1			V	
		P-CH	- 1.2		- 2.5	- 1				
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	$V_{GS} = 10\text{ V}$	$I_{D(on)}$	N-CH	2			1		A	
	$V_{GS} = - 10\text{ V}$		P-CH	- 1			- 1			
Drain-Source On-Resistance	$V_{GS} = 10\text{ V}$	$R_{DS(on)}$	N-CH		0.323	0.388		0.410	0.480	Ω
	$V_{GS} = - 10\text{ V}$		P-CH		0.740	0.890		0.800	0.940	
	$V_{GS} = 4.5\text{ V}$		N-CH		0.437	0.525		0.600	0.700	
	$V_{GS} = - 4.5\text{ V}$		P-CH		1.400	1.700		1.500	1.700	
Forward Transconductance	g_{fs}	N-CH		1.2			0.75		S	
		P-CH		0.6			0.50			
Diode Forward Voltage	V_{SD}	N-CH		0.8	1.2		0.8	1.2	V	
		P-CH		- 0.8	- 1.2		- 0.86	- 1.2		

Specification Comparison

Vishay Siliconix



SPECIFICATIONS ($T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted)									
PARAMETER	SYMBOL		Si1539CDL			Si1539DL			UNIT
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Dynamic									
Total Gate Charge	Q_g	N-CH		6	9		9.8	15	nC
		P-CH		7.8	12		8.7	20	
Gate-Source Charge	Q_{gs}	N-CH		1.3			21		
		P-CH		1.3			1.9		
Gate-Drain Charge	Q_{gd}	N-CH		0.9			1.6		
		P-CH		1.8			1.3		
Gate Resistance	R_g	N-CH	0.6	3.1	6.2		NS	NS	Ω
		P-CH	2	10	20		NS	NS	

Notes

a. $T_A = 85\text{ }^\circ\text{C}$ instead of $70\text{ }^\circ\text{C}$.

NS denotes not specified in original specification.

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.