

Si4430BDY vs. Si4430DY

Description: N-Channel, 30-V (D-S) MOSFET
Package: SO-8
Pin Out: Identical

Part Number Replacements:

Si4430BDY-T1-E3 Replaces Si4430DY-T1-E3

Si4430BDY-T1-E3 Replaces Si4430DY-T1

Summary of Performance:

The Si4430BDY is the replacement to the original Si4430DY; both parts perform identically, including limits to the parametric tables below.

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	Si4430BDY	Si4430DY	Unit
Drain-Source Voltage		V _{DS}	30	30	V
Gate-Source Voltage		V _{GS}	±20	±20	
Continuous Drain Current	T _A = 25°C	I _D	20	23	A
	T _A = 70°C		16	19	
Pulsed Drain Current		I _{DM}	60	60	
Continuous Source Current (MOSFET Diode Conduction)		I _S	2.7	2.9	
Power Dissipation	T _A = 25°C	P _D	3.0	3.5	W
	T _A = 70°C		2.0	2.2	
Operating Junction & Storage Temperature Range		T _J & T _{stg}	-55 to 150	-55 to 150	°C
Maximum Junction-to-Ambient		R _{thJA}	41	35	°C/W

SPECIFICATIONS (T _J = 25°C UNLESS OTHERWISE NOTED)									
Parameter		Symbol	Si4430BDY			Si4430DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		V _{GS(th)}	1.0		3.0	1.7		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} = 10 V	I _{D(on)}	40			30		A	
Drain-Source On-Resistance	V _{GS} = 10 V	r _{DS(on)}		0.0037	0.0045		0.004	NS	
	V _{GS} = 4.5 V			0.0048	0.006		0.0068	0.008	
Forward Transconductance		g _{fs}		80		80		S	
Diode Forward Voltage		V _{SD}		0.72	1.1		0.8	1.2	V
Dynamic									
Total Charge		Q _g		24	36		36	55	nC
Gate-Source Charge		Q _{gs}		10.5			15		
Gate-Drain Charge		Q _{gd}		7.5			12		
Gate Resistance		R _g	0.5	1.1	1.7	1.0	2.2	3.7	Ω
Switching									
Turn-On Time*	t _{d(on)}			20	30		20	30	ns
	t _r			14	22		15	23	
Turn-Off Time*	t _{d(off)}			60	90		105	160	
	t _f			18	30		40	60	
Source-Drain Reverse Recovery Time		t _{rr}		35	50		50	80	