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

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 and Storage Temperature Range		T_j and 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	Ω
	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	

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.