



Si4425BDY vs. Si4425DY

Description: P-Channel, 30 V (D-S) MOSFET

Package: SOIC-8

Pin Out: Identical

Part Number Replacements:

Si4425BDY Replaces Si4425DY

Si4425BDY-E3 (Lead (Pb)-free version) Replaces Si4425DY

Si4425BDY-T1 Replaces Si4425DY-T1

Si4425BDY-T1-E3 (Lead (Pb)-free version) Replaces Si4425DY-T1

ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted					
Parameter	Symbol	Si4425BDY	Si4425DY	Unit	
Drain-Source Voltage	V_{DS}	- 30	- 30	V	
Gate-Source Voltage	V_{GS}	± 20	± 20		
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	- 11.4	- 11	A
	$T_A = 70\text{ }^\circ\text{C}$		- 9.1	- 8.7	
Pulsed Drain Current	I_{DM}	- 50	- 50		
Continuous Source Current (MOSFET Diode Conduction)	I_S	- 2.1	- 2.7		
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	2.5	3.0	W
	$T_A = 70\text{ }^\circ\text{C}$		1.6	1.9	
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}	50	42	$^\circ\text{C/W}$	

SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted									
Parameter	Symbol	Si4425BDY			Si4425DY			Unit	
		Min	Typ	Max	Min	Typ	Max		
Static									
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	- 30			- 30			V	
Gate-Threshold Voltage	$V_{G(th)}$	- 1.0		- 3.0	- 1.0	- 1.9	- 3.0		
Gate-Body Leakage	I_{GSS}			± 100			± 100	nA	
Zero Gate Voltage Drain Current	I_{DSS}			- 1			- 1	μA	
On-State Drain Current	$V_{GS} = - 10\text{ V}$	$I_{D(on)}$	- 50		- 30			A	
Drain-Source On-Resistance	$V_{GS} = - 10\text{ V}$	$r_{DS(on)}$		0.011	0.0135		0.010	0.014	Ω
	$V_{GS} = - 4.5\text{ V}$			0.0165	0.020		0.017	0.023	
Forward Transconductance		g_{fs}		23		23		S	
Diode Forward Voltage		V_{SD}	- 0.75	- 1.1		- 0.75	- 1.1	V	
Dynamic									
Total Gate Charge		Q_g		33	50		33	50	nC
Gate-Source Charge		Q_{gs}		10			10		
Gate-Drain Charge		Q_{gd}		13			13		
Gate Resistance		R_g		3.2			3.2		Ω
Switching									
Turn-On Time		$t_{d(on)}$		20	30		20	30	ns
		t_r		15	25		15	25	
Turn-Off Time		$t_{d(off)}$		95	150		95	150	
		t_f		44	65		44	65	
Source-Drain Reverse Recovery Time		t_{rr}		50	80		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.