Si4427BDY vs. Si4427DY

Description: **P-Channel, 30 V (D-S) MOSFET**
Package: **SOIC-8**
Pin Out: **Identical**

Part Number Replacements:

Si4427BDY Replaces Si4427DY
Si4427BDY-E3 (Lead (Pb)-free version) Replaces Si4427DY
Si4427BDY-T1 Replaces Si4427DY-T1
Si4427BDY-T1-E3 (Lead (Pb)-free version) Replaces Si4427DY-T1

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

Parameter		Symbol	Si4427BDY	Si4427DY	Unit
Drain-Source Voltage		V_{DS}	- 30	- 30	V
Gate-Source Voltage		V_{GS}	± 12	± 12	
Continuous Drain Current	T_A = 25 °C	I_D	- 12.6	- 13.3	A
	T_A = 70 °C		- 10.1	- 10.7	
Pulsed Drain Current		I_{DM}	- 50	- 50	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 2.5	- 2.5	
Power Dissipation	T_A = 25 °C	P_D	2.5	3.0	W
	T_A = 70 °C		1.6	1.9	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	50	42	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

Parameter		Symbol	Si4427BDY			Si4427DY			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{G(th)}$	- 0.6		- 1.4	- 0.6			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	$I_{D(on)}$	- 50			- 50			A
Drain-Source On-Resistance	V_{GS} = - 10 V	$r_{DS(on)}$		0.0088	0.0105		0.0086	0.0105	Ω
	V_{GS} = - 4.5 V			0.0105	0.0125		0.0105	0.0125	
	V_{GS} = - 2.5 V			0.0150	0.0195		0.0165	0.0195	
Forward Transconductance		g_{fs}		44			40		S
Diode Forward Voltage		V_{SD}		- 0.8	- 1.2		- 0.8	- 1.2	V
Dynamic									
Total Gate Charge		Q_g		47.2	70		47	70	nC
Gate-Source Charge		Q_{gs}		9.5			20		
Gate-Drain Charge		Q_{gd}		16.6			8.3		
Switching									
Turn-On Time		$t_{d(on)}$		12	20		16	25	ns
		t_r		15	25		12	20	
Turn-Off Time		$t_{d(off)}$		242	360		220	330	
		t_f		110	165		70	110	
Source-Drain Reverse Recovery Time		t_{rr}		70	110		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.