Si3446ADV vs. Si3446DV

Description: **N-Channel, 20 V (D-S) MOSFET**
Package: **TSOP-6**
Pin Out: **Identical**

Part Number Replacements

Si3446ADV-T1-E3 Replaces Si3446DV-T1-E3
Si3446ADV-T1-E3 Replaces Si3446DV-T1

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

Parameter		Symbol	Si3446ADV	Si3446DV	Unit
Drain-Source Voltage		V_{DS}	20	20	V
Gate-Source Voltage		V_{GS}	± 12	± 12	
Continuous Drain Current	T_A = 25 °C	I_D	5.8	5.3	A
	T_A = 70 °C		4.7	4.2	
Pulsed Drain Current		I_{DM}	20	20	
Continuous Source Current (MOSFET Diode Conduction)	**TC = 25 °C**	I_S	1.7	1.7	
	TA = 25 °C				
Power Dissipation	T_A = 25 °C	P_D	2	2.0	W
	T_A = 70 °C		1.25	1.3	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	62.5	62.5	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)

Parameter		Symbol	Si3446ADV			Si3446DV			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	0.8		1.8	0.6		1.6	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} = 4.5 V	$I_{D(on)}$	20			10			A
Drain-Source On-Resistance	V_{GS} = 4.5 V	$r_{DS(on)}$		0.031	0.037		0.032	0.045	Ω
	V_{GS} = 2.5 V			0.053	0.065		0.045	0.065	
Forward Transconductance		g_{fs}		15			20		S
Diode Forward Voltage		V_{SD}		0.8	1.2			1.2	V
Dynamic									
Total Charge		Q_g		3.6	9		10	20	nC
Gate-Source Charge		Q_{gs}		1.45			2.5		
Gate-Drain Charge		Q_{gd}		1.4			2.2		
Gate Resistance		R_g		2.8		0.5		3.0	Ω
Switching									
Turn-On Time		$t_{d(on)}$		7	15		30	50	ns
		t_r		86	130		50	80	
Turn-Off Time		$t_{d(off)}$		25	40		65	100	
		t_r		10	15		35	60	
Source-Drain Reverse Recovery Time		t_{rr}		21	40		60	90	

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.