Si7658ADP vs. Si7658DP

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

Part Number Replacements: Si7658ADP-T1-GE3 replaces Si7658DP-T1-GE3
Si7658ADP-T1-GE3 replaces Si7658DP-T1-E3

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
PARAMETER		**SYMBOL**	**Si7658ADP**	**Si7658DP**	**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	36	37	A
	T_A = 70 °C		29	29.8	
Pulsed Drain Current		I_{DM}	80	100	
Continuous Source Current (MOSFET Diode Conduction)		I_S	4.9	5.6	
Avalanche Current	L = 0.1 mH	I_{AS}	50	50	
Power Dissipation	T_A = 25 °C	P_D	5.4	6.25	W
	T_A = 70 °C		3.4	4.0	
Operating Junction and Storage Temperature Range		T_J and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	23	20	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
			Si7658ADP			**Si7658DP**			
PARAMETER		**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	1.2		2.5	1.0		3.0	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	$I_{D(on)}$	30			30			A
Drain-Source On-Resistance	V_{GS} = 10 V	$R_{DS(on)}$		0.0018	0.0022		0.002	0.0024	Ω
	V_{GS} = 4.5 V			0.0023	0.0028		0.0026	0.00325	
Forward Transconductance		g_{fs}		100			125		S
Diode Forward Voltage		V_{SD}		0.72	1.1		0.75	1.1	V
Dynamic									
Total Gate Charge	V_{GS} = 10 V	Q_g		74	110		110	170	nC
	V_{GS} = 4.5 V			34	51		48.5	75	
Gate-Source Charge		Q_{gs}		12			21		
Gate-Drain Charge		Q_{gd}		10			12		
Gate Resistance		R_g	0.2	0.8	1.6		1.2	2	Ω

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.