SUD50P04-13L vs. SUD45P03-15

Description: **P-Channel, 40 V (D-S) 175 °C MOSFET**
Package: **TO-252**
Pin Out: **Identical**

Part Number Replacements

SUD50P04-13L-E3 Replaces SUD45P03-15-E3
SUD50P04-13L-E3 Replaces SUD45P03-15

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)					
Parameter		**Symbol**	**SUD50P04-13L**	**SUD45P03-15**	**Unit**
Drain-Source Voltage		V_{DS}	- 40	- 30	V
Gate-Source Voltage		V_{GS}	± 20	± 20	
Continuous Drain Current	T_A = 25 °C	I_D	NS	- 13	A
	T_A = 100 °C		NS	- 8	
	T_C = 25 °C		- 60	NS	
	T_C = 100 °C		- 43	NS	
Pulsed Drain Current		I_{DM}	- 100	- 100	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 60	- 13	
Power Dissipation	T_A = 25 °C	P_D	93.7	70	W
	T_A = 70 °C		3	4	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 175	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	18	30	°C/W

SPECIFICATIONS (T_J = 25 °C, unless otherwise noted)									
Parameter		**Symbol**	**SUD50P04-13L**			**SUD45P03-15**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Gate-Threshold Voltage		$V_{GS(th)}$	- 1		- 3	- 1			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	$r_{DS(on)}$		0.0105	0.013		0.012	0.015	Ω
	V_{GS} = - 4.5 V			0.017	0.022		0.020	0.024	
Forward Transconductance		g_{fs}	15			20			S
Diode Forward Voltage		V_{SD}		- 1.0	- 1.5		- 1.0	- 1.5	V
Dynamic									
Total Charge		Q_g		63	95		50	125	nC
Gate-Source Charge		Q_{gs}		13			14		
Gate-Drain Charge		Q_{gd}		16			6.2		
Gate Resistance		R_g		4.3			NS		Ω
Switching									
Turn-On Time		$t_{d(on)}$		15	25		13	20	ns
		t_r		18	30		10	20	
Turn-Off Time		$t_{d(off)}$		60	90		50	100	
		t_f		47	70		20	40	
Source-Drain Reverse Recovery Time		t_{rr}		36	55		55	100	

NS denotes parameter not specified

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.