

Isc P-Channel MOSFET Transistor

SUD50P10-43L

• FEATURES

- TrenchFET® Power MOSFET
- 175 °C Junction Temperature
- 100 % Rg and UIS Tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

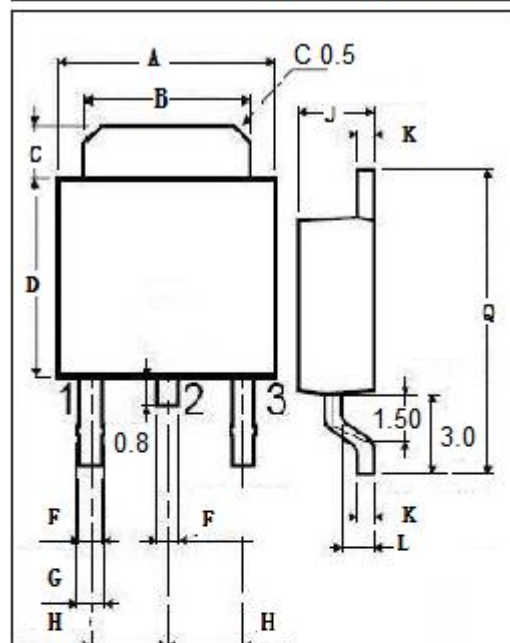
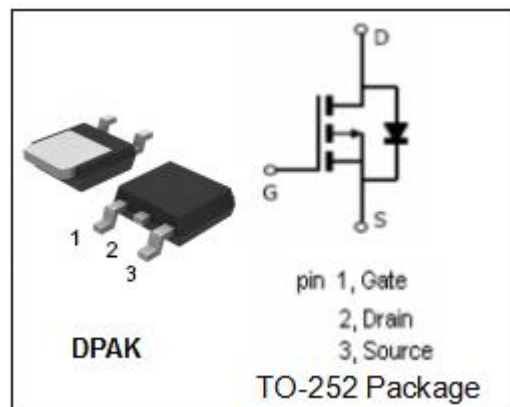
- Power Supply
 - Secondary Synchronous Rectification
- Power tools
- Motor drive switch
- Battery management

• ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{DS}	Drain-Source Voltage	-100	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current-Continuous@ $T_c=25^{\circ}\text{C}$ ($T_J=150^{\circ}\text{C}$)	-37.1	A
	$T_c=125^{\circ}\text{C}$	-31	
	$T_A=25^{\circ}\text{C}$	-9.2	
	$T_A=125^{\circ}\text{C}$	-7.7	
I_{DM}	Drain Current-Single Pulsed($t=100\mu\text{s}$)	-40	A
P_D	Total Dissipation @ $T_c=25^{\circ}\text{C}$	136	W
	$T_c=70^{\circ}\text{C}$	95	
	$T_A=25^{\circ}\text{C}$	8.3	
	$T_A=70^{\circ}\text{C}$	5.8	
T_{ch}	Max. Operating Junction Temperature	-55~175	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~175	$^{\circ}\text{C}$

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(ch-c)}$	Channel-to-case thermal resistance	1.1	$^{\circ}\text{C/W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance $t \leq 10\text{sec}$ Steady State	18 50	$^{\circ}\text{C/W}$



DIM	mm	
	MIN	MAX
A	6.40	6.60
B	5.20	5.40
C	1.15	1.35
D	5.70	6.10
F	0.65	
G	0.75	
H	2.10	2.50
J	2.10	2.40
K	0.40	0.60
L	0.90	1.10
Q	9.90	10.1

Isc P-Channel MOSFET Transistor**SUD50P10-43L****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V; I_D=-0.25mA$	-100			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}= \pm 20V; I_D=-0.25mA$	-1		-3	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}= -10V; I_D=-9.2A$ $V_{GS}= -4.5V; I_D=-7.7A$		36 40	43 48	$m\Omega$
I_{GSS}	Gate-Source Leakage Current	$V_{GS}= \pm 20V; V_{DS}= 0V$			± 0.1	μA
I_{DSS}	Drain-Source Leakage Current	$V_{DS}= -100V; V_{GS}= 0V; T_J=25^{\circ}\text{C}$ $T_J=55^{\circ}\text{C}$			-1 -10	μA
V_{SDF}	Diode forward voltage	$I_F=-7.7A, V_{GS}= 0V$		-0.8	-1.2	V

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