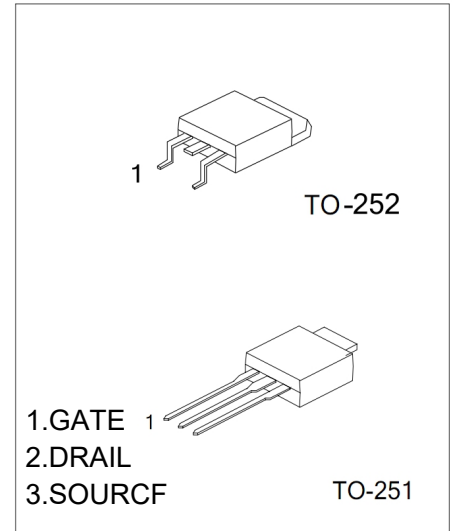




MKFR5410P P-Channel 100-V(D-S) Power MOSFET

V(BR)DSS	RDS(on)MAX	ID
-100 V	205mΩ@ -10 V	-13A

Equivalent Circuit:



General Description:

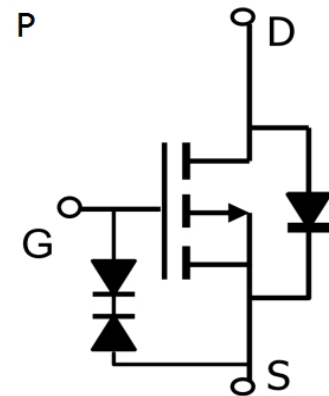
Fifth Generation HEXFETs from International Rectifier utilize advanced processing techniques to achieve extremely low on-resistance per silicon area. This benefit, combined with the fast switching speed and ruggedized device design that HEXFET Power MOSFETs are well known for, provides the designer with an extremely efficient and reliable device for use in a wide variety of applications.

The D-Pak is designed for surface mounting using vapor phase, infrared, or wave soldering techniques. The straight lead version (MKFU series) is for through-hole mounting applications. Power dissipation levels up to 1.5 watts are possible in typical surface mount applications.

FEATURE:

- Ultra Low On-Resistance
- Surface Mount (MKFR5410)
- Straight Lead (MKFU5410)
- Advanced Process Technology
- Fast Switching
- Fully Avalanche Rated
- ESD: 2KV/HBM

SYMBOL:



Maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	-100	V
Gate-Source Voltage	VGS	±20	
Continuous Drain Current	ID	-13	A
Pulsed Diode Current	IDM	-52	
Power Dissipation	PD	66	W
Single Pulse Avalanche Energy	EAS	194	mJ
Avalanche Current	IAR	-8.4	A
Repetitive Avalanche Energy	EAR	6.3	mJ
Peak Diode Recovery dv/dt	dv/dt	-5.0	V/ns
Thermal Resistance from Junction to Ambient (t≤10s)	RθJA	110	°C/W
Operating Junction	TJ	150	°C
Storage Temperature	TSTG	-55~+150	



MOSFET ELECTRICAL CHARACTERISTICS

Static Electrical Characteristics (Ta = 25 °C Unless Otherwise Noted)

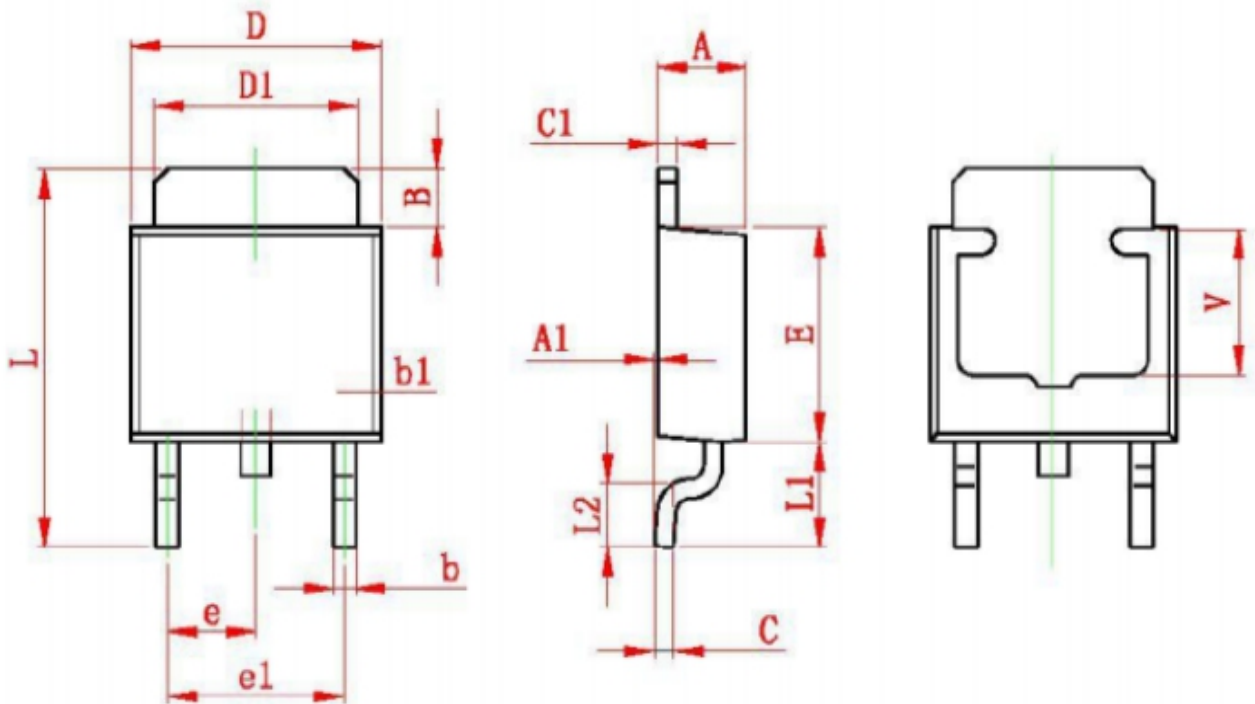
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = -250μA	-100			V
Gate-source threshold voltage	VGS(th)	VDS =VGS, ID = -250μA	-2		-4	V
Gate-source leakage	IGSS	VDS =0V, VGS = ±20V			±10	μA
Zero gate voltage drain current	IDSS	VDS = -100V, VGS =0V			-25	μA
Drain-source on-state resistancea	RDS(on)	VGS = -10V, ID = -7.8A		198	205	mΩ
Forward transconductancea	gfs	VDS = -50V, ID = -7.8A	3.2			S
Diode forward voltage	VSD	IS= -2A, VGS=0V		-0.75	-1.1	V
Dynamic						
Input capacitance	Ciss	VDS = -25V, VGS =0V, f=1MHz		760		pF
Output capacitance	Coss			260		pF
Reverse transfer capacitanceb	Crss			170		pF
Total gate charge	Qg	VDS = -80V, VGS = -10V, ID = -8.4A			58	nC
Gate-source charge	Qgs				8.3	nC
Gate-drain charge	Qgd				32	nC
Switchingb						
Turn-on delay time	td(on)	VDS= -50V RL= 10Ω, ID = -8.4A, VGEN= -10V, Rg= 9Ω		15		ns
Rise time	tr			58		ns
Turn-off delay time	td(off)			45		ns
Fall time	tf			46		ns
Drain-Source Diode Characteristics						
Continuous Source-Drain Diode Current	IS				-13	A
Pulsed Diode forward Curren	ISM				-52	A
Reverse Recovery Time	trr	IF = -8.4A, di/dt = 100A/μs		130	190	ns
Reverse Recovery Charge	Qrr	IF = -8.4A, di/dt = 100A/μs		650	970	nC

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 10 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Starting TJ = 25°C, L = 6.4mH RG = 25W, IAS = -7.8A. (See Figure 12)
5. ISD ≤ -7.8A, di/dt ≤ 200A/μs, VDD ≤ V(BR)DSS, TJ ≤ 150°C
6. This is applied for I-PAK, LS of D-PAK is measured between lead and center of die contact



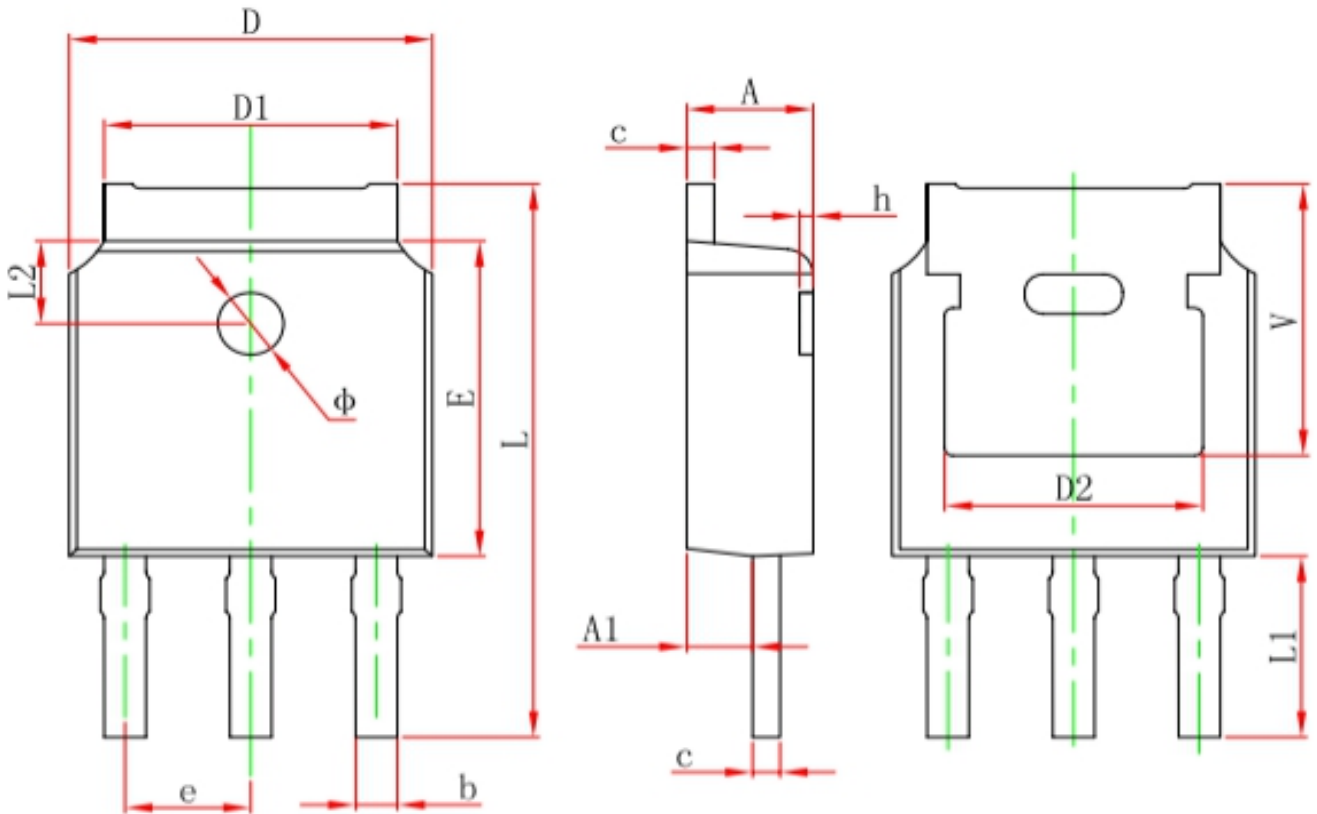
PACKAGE OUTLINE DIMENSIONS :



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP		0.091 TYP	
e1	4.500	4.700	0.177	0.185
L	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
V	3.80 REF		0.150 REF	



PACKAGE OUTLINE DIMENSIONS :



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.860	1.160	0.034	0.046
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	10.400	11.000	0.409	0.433
L1	3.300	3.700	0.130	0.146
L2	1.600 REF.		0.063 REF.	
ϕ	1.100	1.300	0.043	0.051
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	