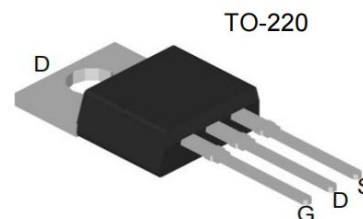




Product Summary

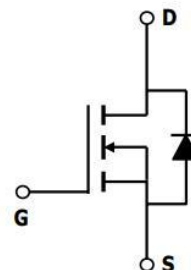
$V_{(BR)DSS}$	$R_{DS(ON)} \text{ max}$	$I_D \text{ max}$
40V	$<2.0m\Omega @ V_{GS}=10V$	175A
	$<2.7m\Omega @ V_{GS}=8V$	

Package & Internal Circuit



Description and Applications

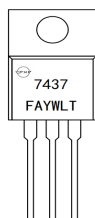
- BLDC Motor drive applications
- Brushed Motor drive applications
- DC/DC and AC/DC converters
- OR-ing and redundant power switches
- 100% UIS Tested
- 100% Rg Tested



Ordering Information

Part Number	Package Type	Package Qty
CFT7437	TO-220	1,000/Tube

Marking Information



Green product

CFXP-Logo

7437--Part Number

F-Fab location

A-Assembly location

Y--Year

W--Week

LT--Lot sequence

Absolute Maximum Rating ($T_{amb}=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current - Continuous	I_D	175	A
		145	A
Pulsed Drain Current	I_{DM}	740	A
Single Pulse Avalanche Energy	E_{AS}	350	mJ
Power Dissipation	P_D	100	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Units
Maximum Junction-to-Ambient	$R_{\theta JA}$	40	50	$^{\circ}\text{C/W}$
Maximum Junction-to-Case	$R_{\theta JC}$		0.65	$^{\circ}\text{C/W}$

Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Static Parameters						
BV_{DSS}	Drain-Source Breakdown Voltage	$I_D = 250\mu\text{A}$, $V_{GS} = 0\text{V}$	40			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 40\text{V}$, $V_{GS} = 0\text{V}$			1	μA
		$T_J = 55^{\circ}\text{C}$			5	μA
I_{GSS}	Gate-Body leakage current	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 20\text{V}$			± 100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$, $I_D = 250\mu\text{A}$	2.5	3.0	3.5	V
$R_{DS(on)}$	Drain-Source on-Resistance	$V_{GS} = 10\text{V}$, $I_D = 20\text{A}$		1.7	2.0	m Ω
		$V_{GS} = 8\text{V}$, $I_D = 15\text{A}$		2.3	2.7	m Ω
V_{SD}	Body Diode Forward Voltage	$I_S = 20\text{A}$, $V_{GS} = 0\text{V}$			0.9	V
I_S	Maximum Body-Diode Continuous Current				100	A
Dynamic parameters						
C_{iss}	Input Capacitance	$V_{GS} = 0\text{V}$ $V_{DS} = 25\text{V}$ $f = 1.0\text{MHz}$		7300		pF
C_{oss}	Output Capacitance			761		pF
C_{rss}	Reverse Transfer Capacitance			461		pF
R_g	Gate resistance	$f = 1.0\text{MHz}$		0.75		Ω
Switching Parameters						
Q_g	Total Gate Charge	$V_{GS} = 10\text{V}$ $V_{DS} = 20\text{V}$ $I_D = 20\text{A}$		106		nC
Q_{gs}	Gate Source Charge			56		nC
Q_{gd}	Gate Drain Charge			26		nC
$t_{D(on)}$	Turn-On Delay Time	$V_{GS} = 10\text{V}$ $V_{DS} = 20\text{V}$ $I_D = 30\text{A}$ $R_G = 3\Omega$		39.5		ns
t_r	Turn-On Rise Time			33		ns
$t_{D(off)}$	Turn-Off Delay Time			39.6		ns
t_f	Turn-Off Fall Time			18		ns
t_{rr}	Body Diode Reverse Recovery Time	$I_F = 40\text{A}$ $di/dt = 108\text{ A}/\mu\text{s}$		60.8		ns
Q_{rr}	Body Diode Reverse Recovery Charge			99		nC

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

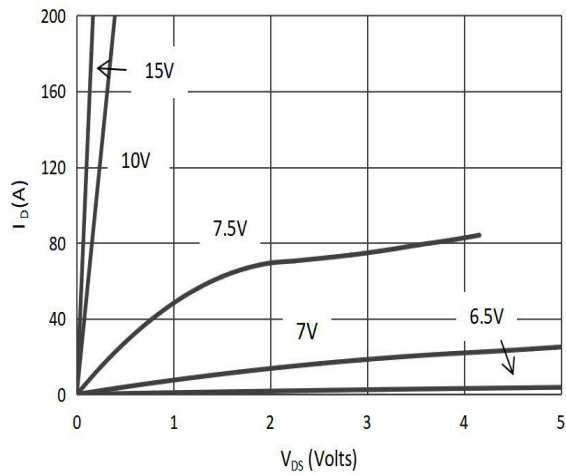


Figure 1: On-Region Characteristics

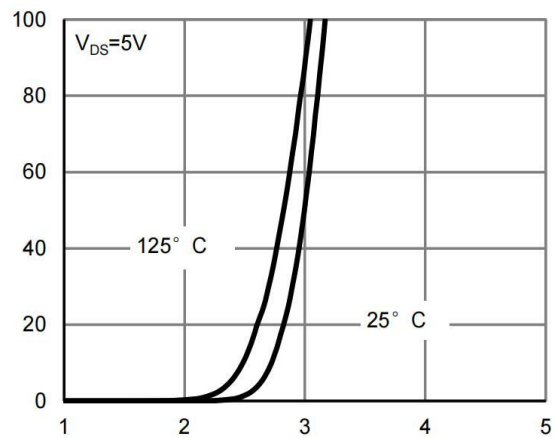


Figure 2: Transfer Characteristic

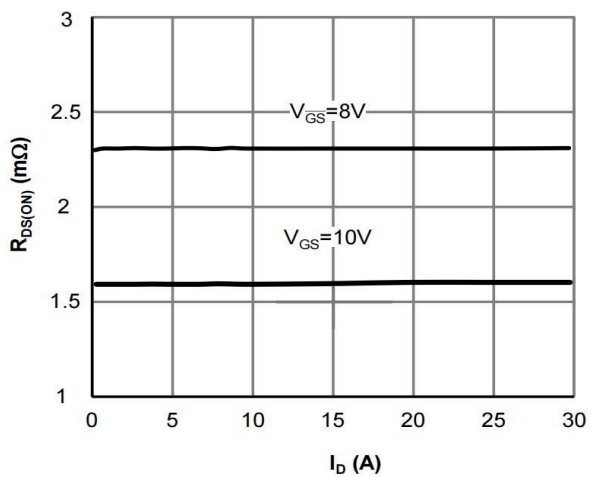


Figure 3: On-Resistance Variation vs. Drain Current and Gate Voltage

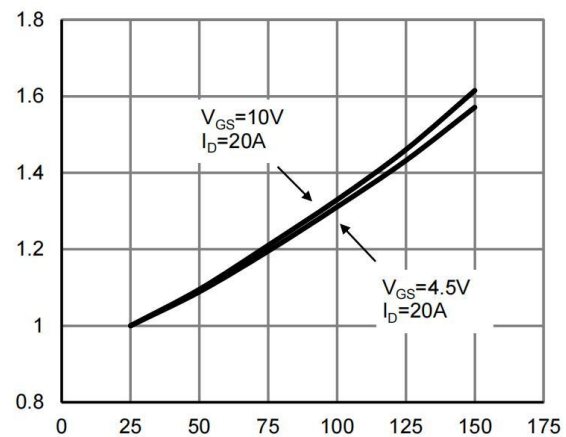


Figure 4: Drain Current

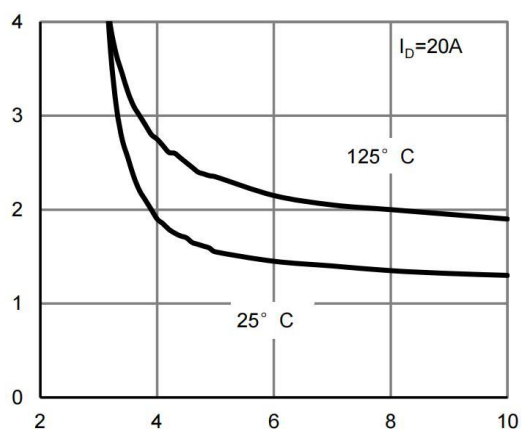


Figure 5: On-Resistance vs. Gate-Source Voltage

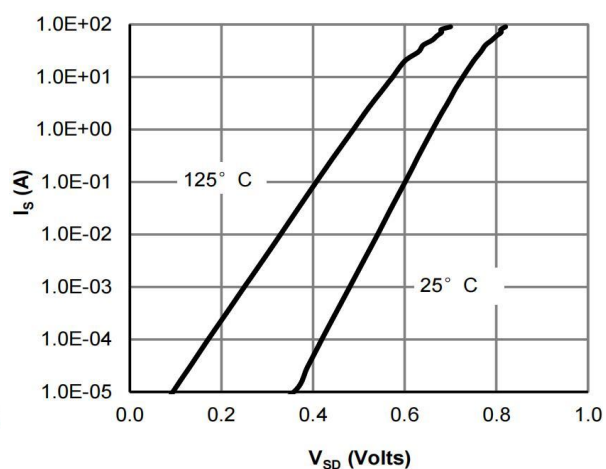


Figure 6: Body-Diode Characteristics

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

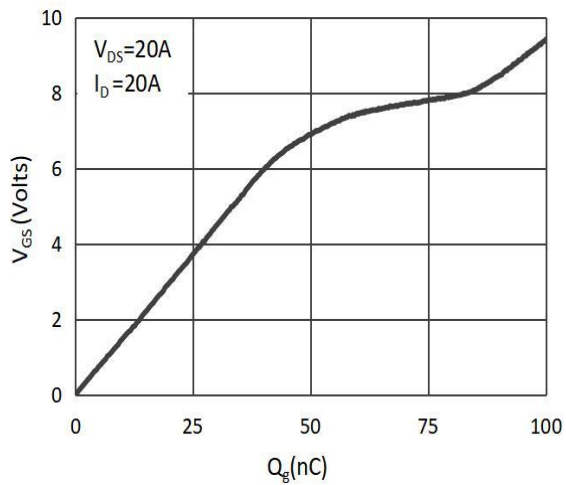


Figure 7: Gate-Charge Characteristics

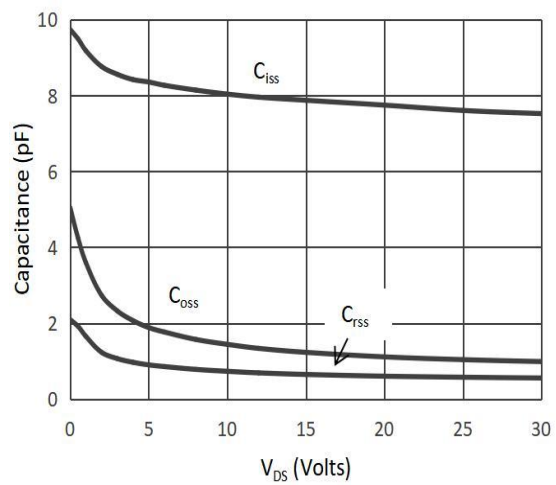


Figure 8: Capacitance Characteristics

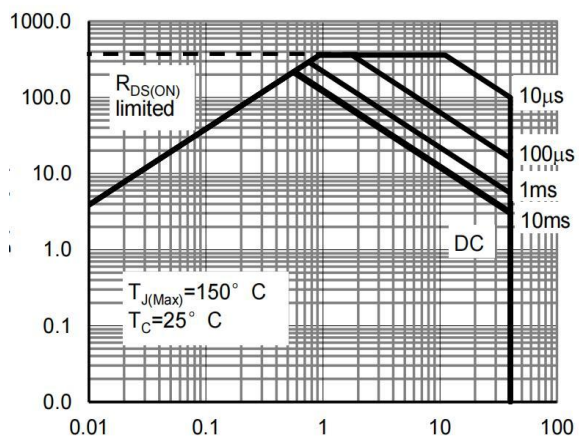


Figure 9: Maximum Forward Biased Safe Operating Area

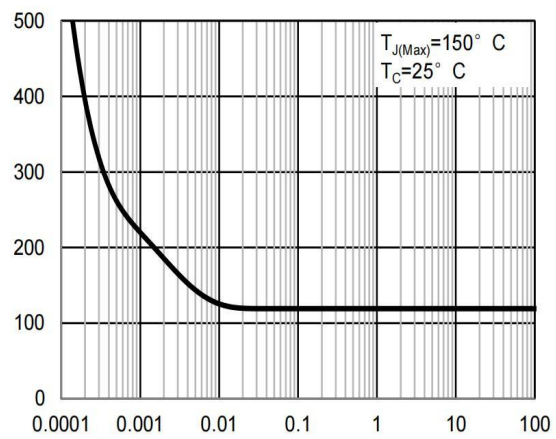
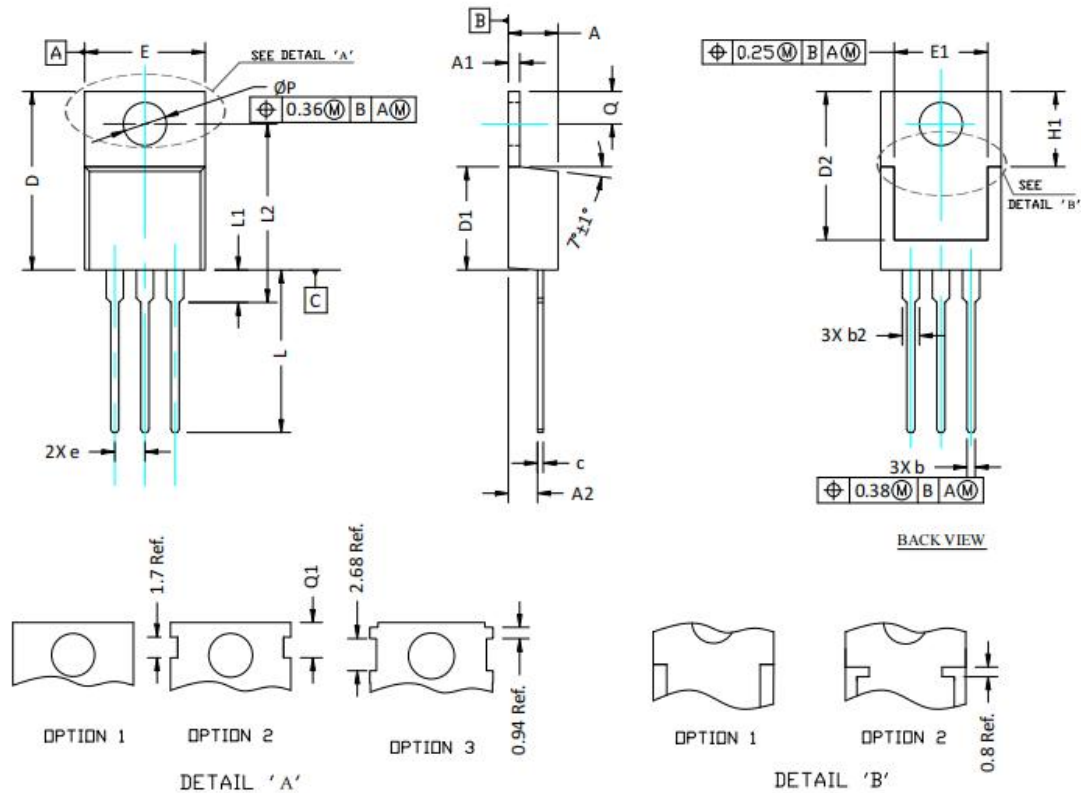


Figure 10: Single Pulse Power Rating Junction-to Case

TO-220 Package



SYMBOLS	DIMENSION IN MM			DIMENSION IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	4.300	4.450	4.720	0.1693	0.1752	0.1858
A1	1.150	1.270	1.400	0.0453	0.0500	0.0551
A2	2.200	2.670	2.900	0.0866	0.1051	0.1142
b	0.690	0.810	0.950	0.0272	0.0319	0.0374
b2	1.170	1.370	1.450	0.0461	0.0539	0.0571
c	0.360	0.380	0.600	0.0142	0.0150	0.0236
D	14.500	15.440	15.800	0.5709	0.6079	0.6220
D1	8.590	9.140	9.650	0.3382	0.3598	0.3799
D2	11.430	11.730	12.480	0.4500	0.4618	0.4913
e	2.540BSC			0.1000BSC		
E	9.660	10.030	10.540	0.3803	0.3949	0.4150
E1	6.220	---	---	0.2449	---	---
H1	6.100	6.300	6.500	0.2402	0.2480	0.2559
L	12.270	12.820	14.270	0.4831	0.5047	0.5618
L1	2.470	---	3.900	0.0972	---	0.1535
L2	---	---	16.700	---	---	0.6575
Q	2.590	2.740	2.890	0.1020	0.1079	0.1138
ΦP	3.500	3.840	3.890	0.1378	0.1512	0.1531
Q1	2.700	---	2.900	0.1063	---	0.1142

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