

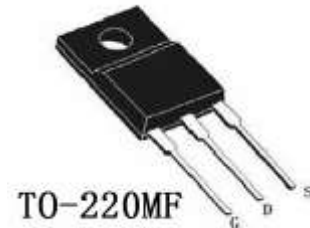
# TJT015N065FED

## N-CHANNEK IGBT

### MAIN CHARACTERISTICS

I <sub>C</sub>	15 A
V <sub>CEs</sub>	650V
V <sub>cesat-typ</sub> (@V <sub>ge</sub> =15V)	1.6V

### Package

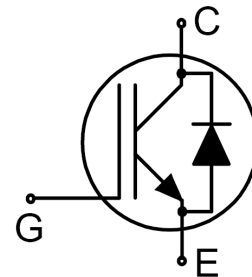


### APPLICATIONS

- General purpose inverters
- UPS

### FEATURES

- Low gate charge
- Trench FS Technology,
- saturation voltage:  
V<sub>CE(sat)</sub>, typ = 1.6V @ I<sub>C</sub>  
= 15A and T<sub>C</sub> = 25°C
- RoHS product



### ABSOLUTE RATINGS (T<sub>C</sub>=25°C)

Parameter	Symbol	Value	Unit
		TJT015N065FED	
Collector-Emmitter Voltage	V <sub>ces</sub>	650	V
Collector Current-continuous	I <sub>C</sub>	30 (T=25°C)	A
		15 (T=100°C)	A
Collector Current – pulse (note 1)	I <sub>CM</sub>	45	A
Gate-Emmitter Voltage	V <sub>GES</sub>	±20	V
Turn-off safe area	-	60	A
Power Dissipation	P <sub>D</sub> T <sub>C</sub> =25°C	31	W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~+150	°C
Maximum Lead Temperature for Soldering Purposes	T <sub>L</sub>	300	°C

\*Collector current limited by maximum junction temperature

### ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
<b>Off –Characteristics</b>						
Collector-Emmitter Voltage	$BV_{CES}$	$I_C=500\mu A, V_{GE}=0V$	650	-	-	V
Breakdown Voltage Temperature Coefficient	$\Delta BV_{CES}/\Delta T_J$	$I_C=1mA$ , referenced to $25^\circ C$	-	0.5	-	$V/^\circ C$
Zero Gate Voltage Collector Current	$I_{CES}$	$V_{CE}=650V, V_{GE}=0V, T_C=25^\circ C$	-	-	10	$\mu A$
Gate-body leakage current, forward	$I_{GESF}$	$V_{CE}=0V, V_{GE}=20V$	-	-	200	nA
Gate-body leakage current, reverse	$I_{GESR}$	$V_{CE}=0V, V_{GE}=-20V$	-	-	-200	nA
<b>On-Characteristics</b>						
Gate Threshold Voltage	$V_{GE(th)}$	$V_{CE} = V_{GE}, I_C=250\mu A$	4.0	-	6.5	V
Collector-Emmitter saturation Voltage	$V_{CESAT}$	$V_{GE}=15V, I_C=15A, T_C=25^\circ C$	-	1.6	2.0	V
<b>Dynamic Characteristics</b>						
Input capacitance	$C_{ies}$	$V_{CE}=25V, V_{GE}=0V, f=1.0MHz$	-	880	-	pF
Output capacitance	$C_{oes}$		-	TBD	-	pF
Reverse transfer capacitance	$C_{res}$		-	TBD	-	pF
Total Gate Charge	$Q_g$	$V_{CC}=400V, I_C=15A, R_G=10\Omega, V_{GE}=15V, T_C=25^\circ C$	-	TBD	-	nC
Gate to emitter charge	$Q_{ge}$		-	TBD	-	
Gate to collector charge	$Q_{gc}$		-	TBD	-	
Gate resistance	$R_g$	$f=1MHz$ , open collector	-	1.75	-	$\Omega$
short current	$I_{sc}$	$V_{GE}=15V, V_{CE}=360V$	-	75	-	A

### ELECTRICAL CHARACTERISTICS

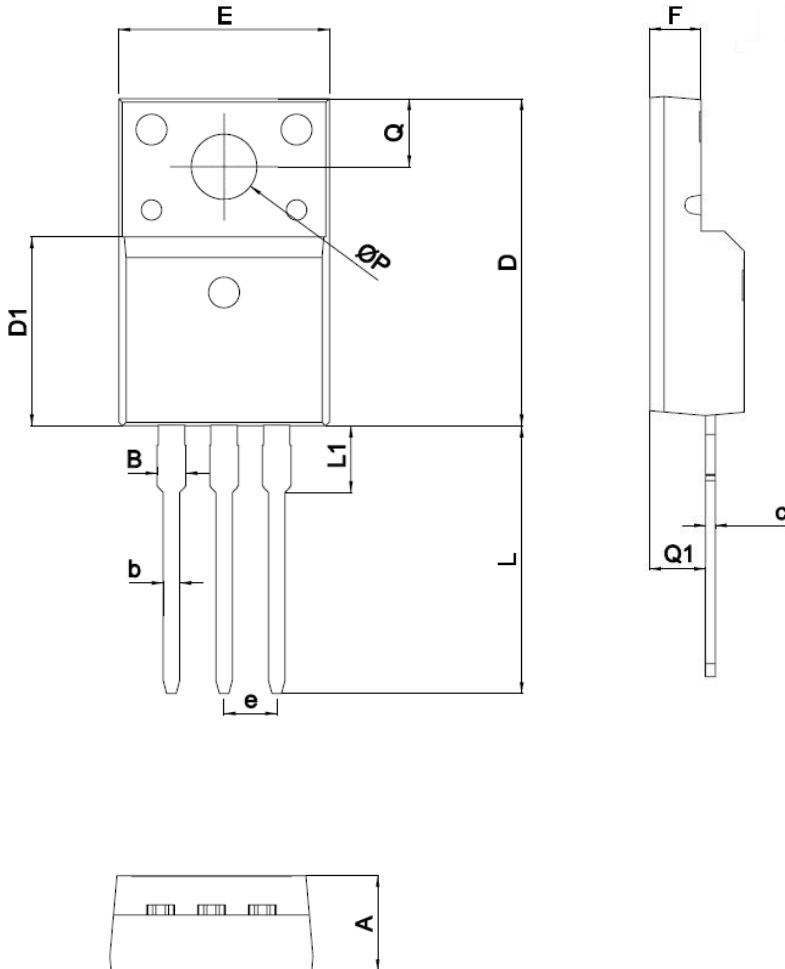
Switching Characteristics						
Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Turn-On delay time	$t_d(\text{on})$	$V_{CC}=400V, I_c=15A, R_G=60\Omega$ $V_{GE}=15V$ $T_C=25^\circ C$	-	TBD	-	ns
Turn-On rise time	$t_r$		-	TBD	-	ns
Turn-Off delay time	$t_d(\text{off})$		-	TBD	-	ns
Turn-Off Fall time	$t_f$		-	TBD	-	ns
Turn-On energy	Eon		-	TBD	-	$\mu J$
Turn-off energy	Eoff		-	TBD	-	$\mu J$
Total switching energy	Etot		-	TBD	-	$\mu J$
Anti-Parallel Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	$V_F$	$V_{GE}=0V, I_S=15A$	-	1.4	2.2	V
Diode Reverse recovery time	$t_{rr}$	$V_{GE}=0V, V_R=400V, I_F=15A$ $di_F/dt=200A/\mu s$ (note 4)	-	TBD	-	ns
Diode Reverse recovery charge	Qrr		-	TBD	-	nC
Diode Reverse recovery Current	$I_{RRM}$		-	TBD	-	A

Parameter	Symbol	Typ		Unit
		JT05N065FED		
Thermal Resistance, Junction to Case	$R_{th(j-c)}$	4.8		$^\circ C/W$
Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	62.5		$^\circ C/W$

## PACKAGE MECHANICAL DATA

### TO-220MF

Unit: mm



SYMBOL	mm	
	MIN	MAX
A	4.5	4.9
B		1.47
b	0.7	0.9
c	0.45	0.60
D	15.67	16.07
D1	9.04	9.20
e	2.54TYPE	
E	9.96	10.36
F	2.34	2.74
L	12.58	13.38
L1	3.13	3.33
Q	3.2	3.4
Q1	2.56	2.96
$\Phi P$	3.08	3.28