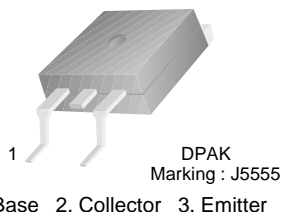


# FJD5555

## High Voltage Switch Mode Application

- Fast Speed Switching
- Wide Safe Operating Area
- Suitable for Electronic Ballast Application



### Absolute Maximum Ratings \* $T_C=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$BV_{CBO}$	Collector-Base Voltage	1050	V
$BV_{CEO}$	Collector-Emitter Voltage	400	V
$BV_{EBO}$	Emitter-Base Voltage	14	V
$I_C$	Collector Current (DC)	5	A
$I_{CP}$	Collector Current (Pulse)	10	A
$I_B$	Base Current (DC)	2	A
$I_{BP}$	Collector Current (Pulse)	4	A
$P_C$	Collector Dissipation.	1.34	W
$T_J$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{STG}$	Storage Junction Temperature Range	- 55 ~ 150	$^{\circ}\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### Thermal Characteristics $T_a=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	95	$^{\circ}\text{C}/\text{W}$

\* Device mounted on minimum pad size

### Package Marking and Ordering Information

Part Number	Marking	Package	Packing Method	Remarks
FJD5555TM	J5555	D-PAK	Tape & Reel	



**Electrical Characteristics** \*  $T_C=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=500\mu\text{A}, I_E=0$	1050			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=5\text{mA}, I_B=0$	400			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=500\mu\text{A}, I_C=0$	14			V
$h_{FE}$	DC Current Gain	$V_{CE}=5\text{V}, I_C=10\text{mA}$	10			
		$V_{CE}=3\text{V}, I_C=0.8\text{A}$	20		40	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C=1\text{A}, I_B=0.2\text{A}$		0.17	0.5	V
		$I_C=3.5\text{A}, I_B=1.0\text{A}$			1.5	V
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage	$I_C=3.5\text{A}, I_B=1.0\text{A}$			1.2	V
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}, f=1\text{MHz}$		45		pF
$t_{ON}$	Turn On Time	$V_{CC}=125\text{V}, I_C=0.5\text{A}$ $I_{B1}=45\text{mA}, I_{B2}=0.5\text{A}$ $R_L=250\Omega$			1.0	$\mu\text{s}$
$t_{STG}$	Storage Time				1.2	$\mu\text{s}$
$t_F$	Fall Time			0.3		$\mu\text{s}$
$t_{ON}$	Turn On Time	$V_{CC}=250\text{V}, I_C=2.5\text{A}$ $I_{B1}=0.5\text{A}, I_{B2}=1.0\text{A}$ $R_L=100\Omega$			2.0	$\mu\text{s}$
$t_{STG}$	Storage Time				2.5	$\mu\text{s}$
$t_F$	Fall Time				0.3	$\mu\text{s}$
EAS	Avalanche Energy	$L=2\text{mH}$	6			mJ

\* Pulse Test: Pulse Width $\leq 300\mu\text{s}$ , Duty Cycle $\leq 2\%$

## Typical Characteristics

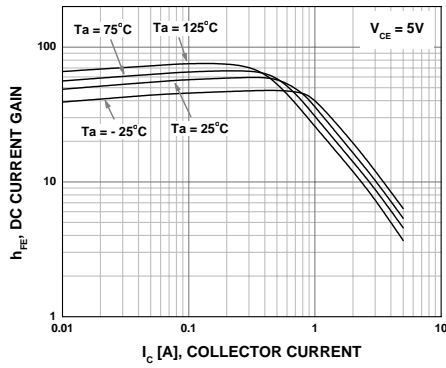


Figure 1. DC Current Gain

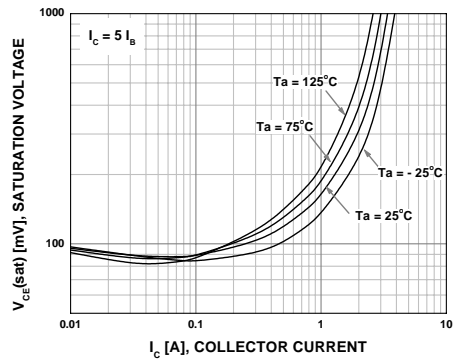


Figure 2. Saturation Voltage

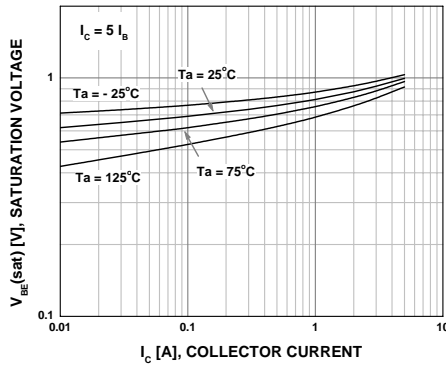


Figure 3. Saturation Voltage

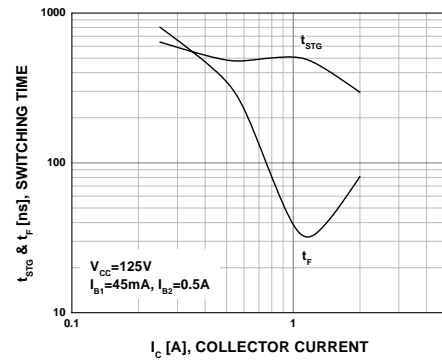


Figure 4. Resistive Load Switching

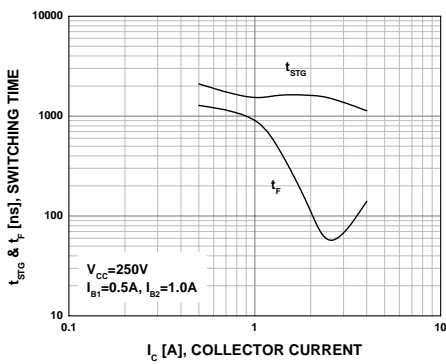


Figure 5. Resistive Load Switching

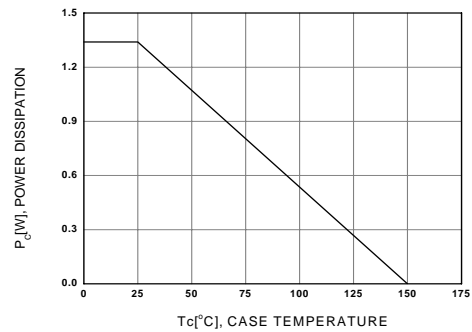
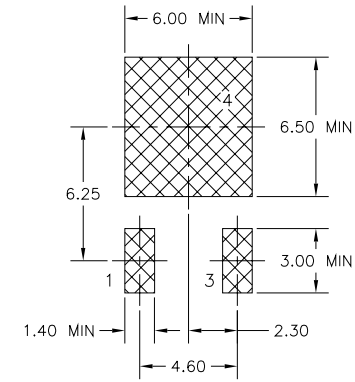
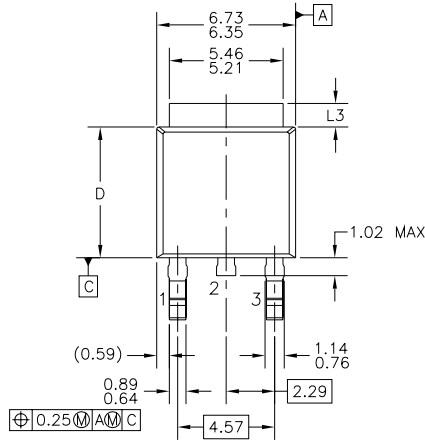


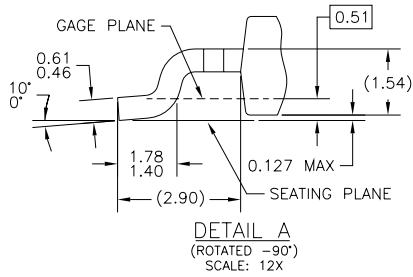
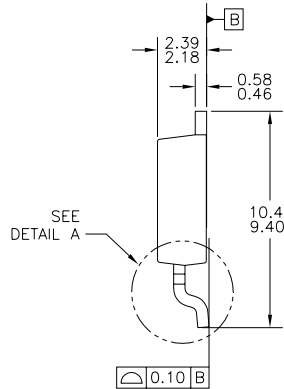
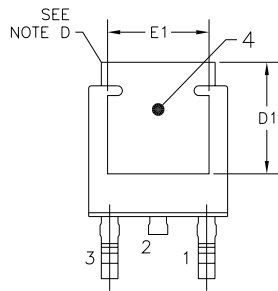
Figure 6. Power Derating

## Mechanical Dimensions

# D-PAK



LAND PATTERN RECOMMENDATION



NOTES: UNLESS OTHERWISE SPECIFIED

- A) ALL DIMENSIONS ARE IN MILLIMETERS.
- B) THIS PACKAGE CONFORMS TO JEDEC, TO-252, ISSUE C, VARIATION AA & AB, DATED NOV. 1999.
- C) DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
- D) HEAT SINK TOP EDGE COULD BE IN CHAMFERED CORNERS OR EDGE PROTRUSION.
- E) DIMENSIONS L3,D,E1&D1 TABLE:

	OPTION AA	OPTION AB
L3	0.89-1.27	1.52-2.03
D	5.97-6.22	5.33-5.59
E1	4.32 MIN	3.81 MIN
D1	5.21 MIN	4.57 MIN

- F) PRESENCE OF TRIMMED CENTER LEAD IS OPTIONAL.

Dimensions in Millimeters



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CROSSVOLT <sup>™</sup>	<i>i-Lo</i> <sup>™</sup>	PowerTrench <sup>®</sup>	the power franchise <sup>®</sup>
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Current Transfer Logic <sup>™</sup>	ISOPLANAR <sup>™</sup>	QFET <sup>®</sup>	TinyBuck <sup>™</sup>
EcoSPARK <sup>®</sup>	MegaBuck <sup>™</sup>	QS <sup>™</sup>	TinyLogic <sup>®</sup>
<b>F</b> <sup>®</sup>	MICROCOUPLER <sup>™</sup>	QT Optoelectronics <sup>™</sup>	TINYOPTO <sup>™</sup>
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FAST <sup>®</sup>	OPTOLOGIC <sup>®</sup>	STEALTH <sup>™</sup>	UHC <sup>®</sup>
FastvCore <sup>™</sup>	OPTOPLANAR <sup>®</sup>	SuperFET <sup>™</sup>	UniFET <sup>™</sup>
FPS <sup>™</sup>	 <sup>®</sup>	SuperSOT <sup>™</sup> -3	VCX <sup>™</sup>
FRFET <sup>®</sup>	PDP-SPM <sup>™</sup>	SuperSOT <sup>™</sup> -6	
Global Power Resource <sup>SM</sup>	Power220 <sup>®</sup>		

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