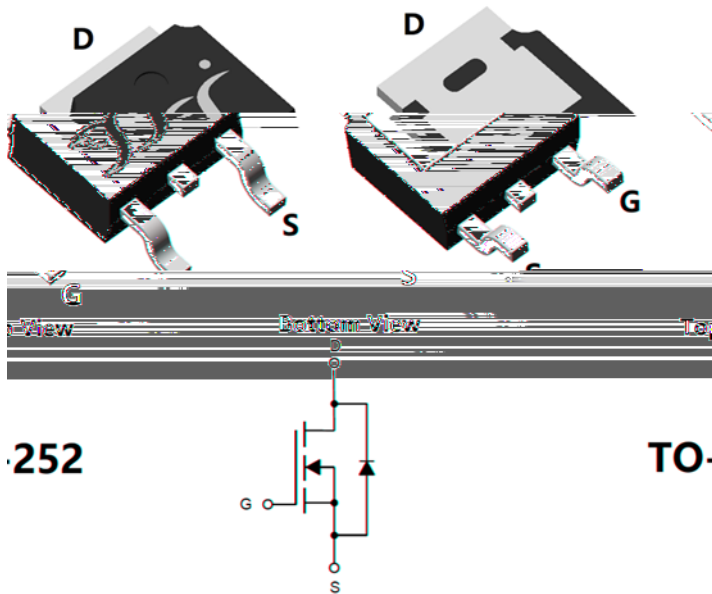




## N-Channel Enhancement Mode Field Effect Transistor



## Product Summary

$V_{DS}$	100V
$I_D$	27A
$R_{DS(ON)}$ (at $V_{GS}=10V$ )	29m
$R_{DS(ON)}$ (at $V_{GS}=4.5V$ )	47m
100% EAS Tested	
100% $V_{DS}$ Tested	

## General Description

Split gate trench MOSFET technology  
 Excellent package for heat dissipation  
 High density cell design for low  $R_{DS(ON)}$   
 Extremely low switching loss  
 Excellent stability and uniformity  
 Fast switching and soft recovery  
 Moisture Sensitivity Level 1  
 Epoxy Meets UL 94 V-0 Flammability Rating  
 Halogen Free

## Applications

Power switching application  
 Hard switched and high frequency circuits  
 Uninterruptible power supply  
 DC-DC convertor

Absolute Maximum Ratings ( $T_A=25$  unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		$V_{DS}$	100	V
Gate-source Voltage		$V_{GS}$	$\pm 20$	V
Drain Current	$T_A=25^\circ C$	$I_D$	6	A
	$T_A=100^\circ C$		4	
	$T_C=25^\circ C$		27	
	$T_C=100^\circ C$		19	
Pulsed Drain Current <sup>A</sup>		$I_{DM}$	80	A
Avalanche energy <sup>B</sup>		EAS	27.5	mJ
Total Power Dissipation <sup>C</sup>	$T_A=25^\circ C$	$P_D$	3	W
	$T_A=100^\circ C$		1.5	
	$T_C=25^\circ C$		50	
	$T_C=100^\circ C$		25	
Junction and Storage Temperature Range		$T_J, T_{STG}$	-55 +175	$^\circ C$

## Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient <sup>D</sup>	Steady-State	R	40	50	$^\circ C/W$
Thermal Resistance Junction-to-Case	Steady-State	R	2.5	3	

## Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJD27G10A	F1/F2	YJD27G10A	2500	/	25000	



**YJD27G10A**



# YJD27G10A

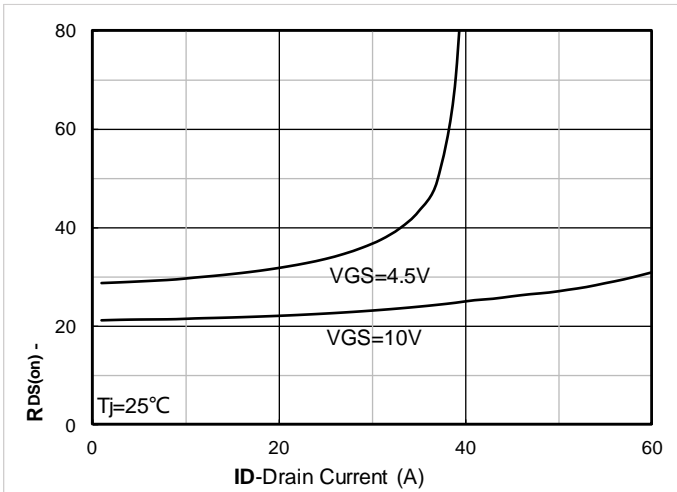


Figure 7. RDS(on) VS Drain Current

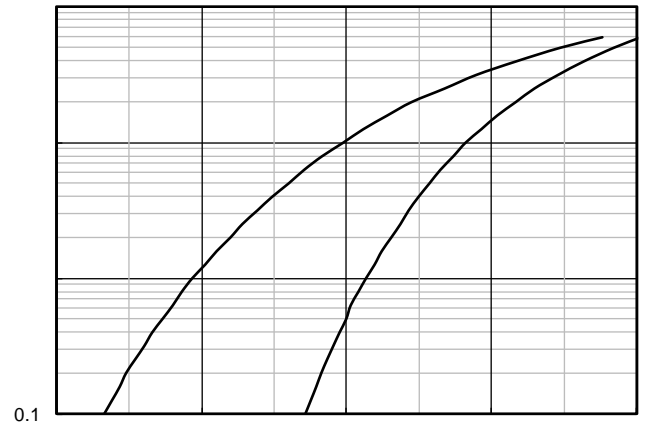


Figure 8. Forward characteristics of reverse diode

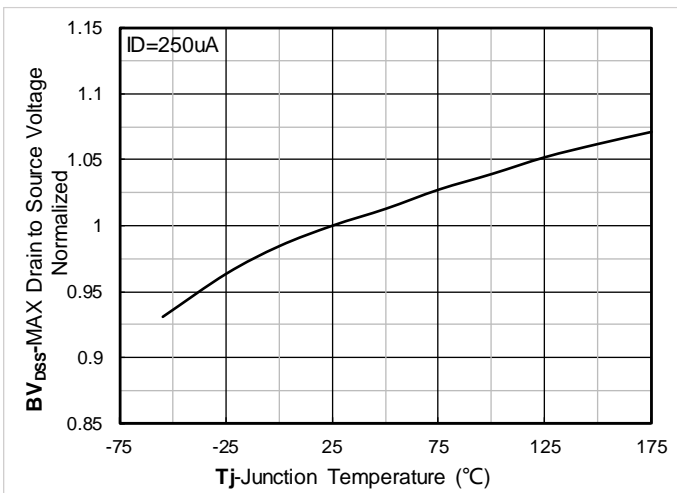


Figure 9. Normalized breakdown voltage

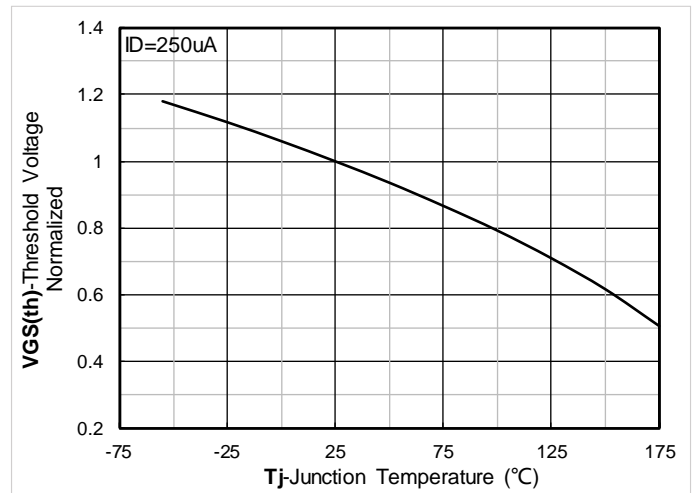


Figure 10. Normalized Threshold voltage

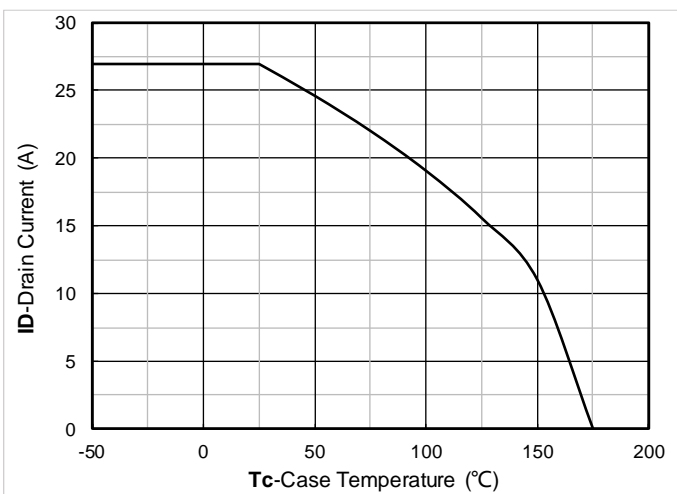


Figure 11. Current dissipation

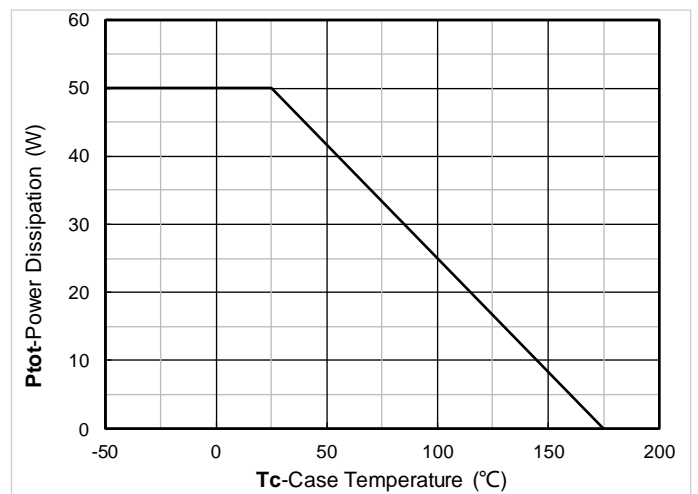


Figure 12. Power dissipation



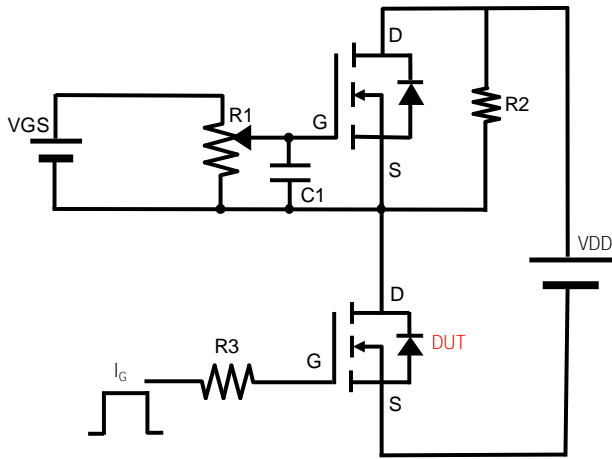


Figure B. Gate Charge Test Circuit & Waveform

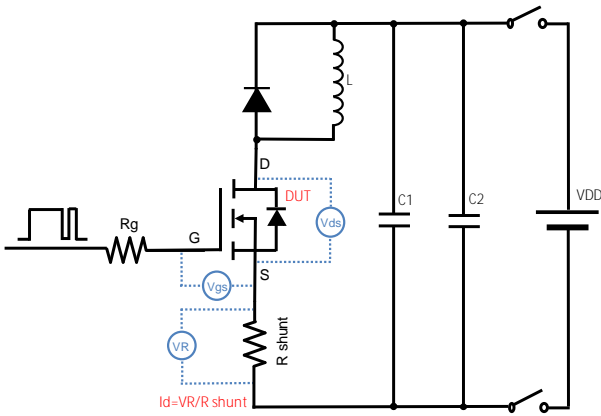


Figure C. Resistive Switching Test Circuit & Waveform

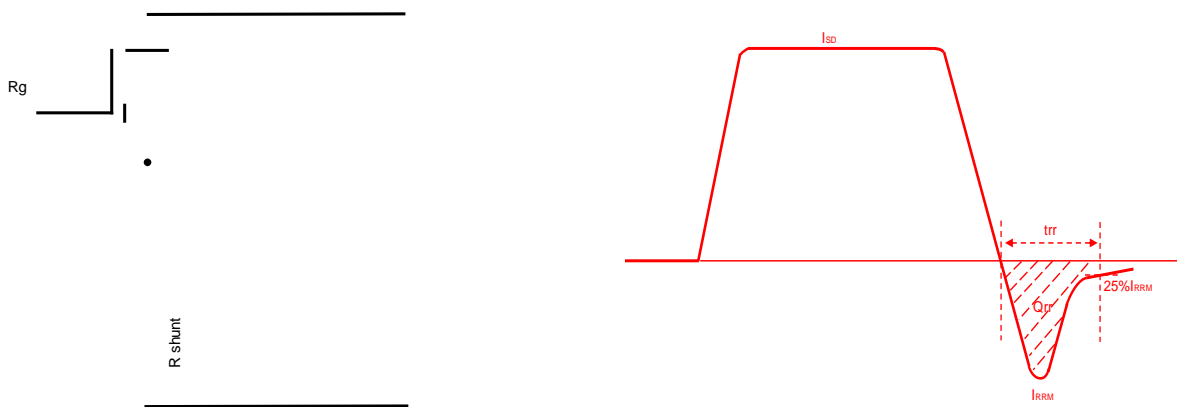
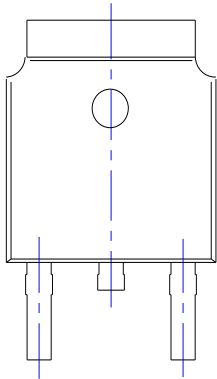


Figure D. Diode Recovery Test Circuit & Waveform



# YJD27G10A

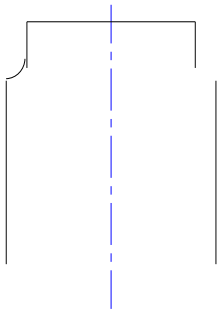
## TO-252-B Package information



TOP VIEW



SIDE VIEW



BOTTOM VIEW

SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS				
	INCHES				
	MIN.	NOM.			
A1	0.000				
A2	0.087	0.091			
A3	0.035	0.039			
b	0.026	0.030			
c	0.018	0.020			
D	0.256	0.260			
D1					
D2	0.181	0.189			
E	0.390	0.398			
E1	0.236	0.240			

**NOTE:**

1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

**YJD27G10A**