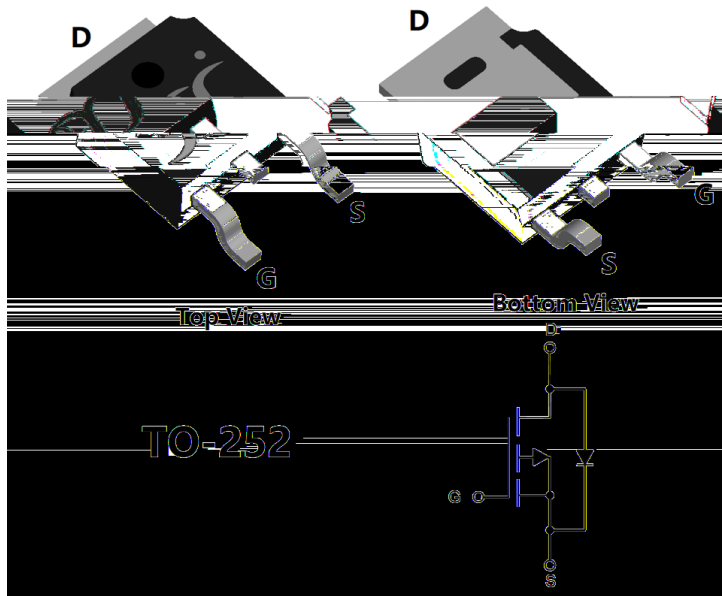




YJD50GP06A

P-Channel Enhancement Mode Field Effect Transistor



Product Summary

V_{DS}	-60 V
I_D	-50 A
$R_{DS(ON)}$ (at $V_{GS}=-10V$)	12 m
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$)	15 m
100% EAS Tested	
100% V_{DS} Tested	

General Description

- Split gate trench MOSFET technology
- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	-60	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^\circ C$	I_D	-8	A
	$T_A=100^\circ C$		-5	
	$T_C=25^\circ C$		-50	
	$T_C=100^\circ C$		-31	
Pulsed Drain Current ^A		I_{DM}	-200	A
Avalanche energy ^B		EAS	169	mJ
Total Power Dissipation ^C	$T_A=25^\circ C$	P_D	2	W
	$T_A=100^\circ C$		0.8	
	$T_C=25^\circ C$		89	
	$T_C=100^\circ C$		35	
Junction and Storage Temperature Range		T_J, T_{STG}	-55 +150	$^\circ C$

Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^D	Steady-State	R	50	60	$^\circ C/W$
Thermal Resistance Junction-to-Case	Steady-State	R	1.2	1.4	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJD50GP06A	F1/F2	YJD50GP06A	2500	/	25000	13 reel



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Electrical Characteristics ($T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-$	-60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$	-	-	-1	
		$V_{DS}=-60V, V_{GS}=0V, T_J=150^\circ C$	-	-		
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{DS}=V_{GS}, I_D=-$	-1	-2		
		$V_{GS}=-10V, I_D=-25A$	-	9	12	



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Typical Electrical and Thermal Characteristics Diagrams

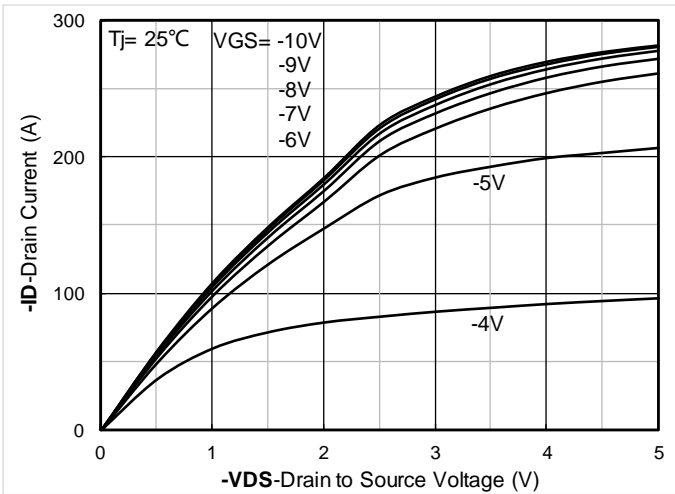


Figure 1. Output Characteristics

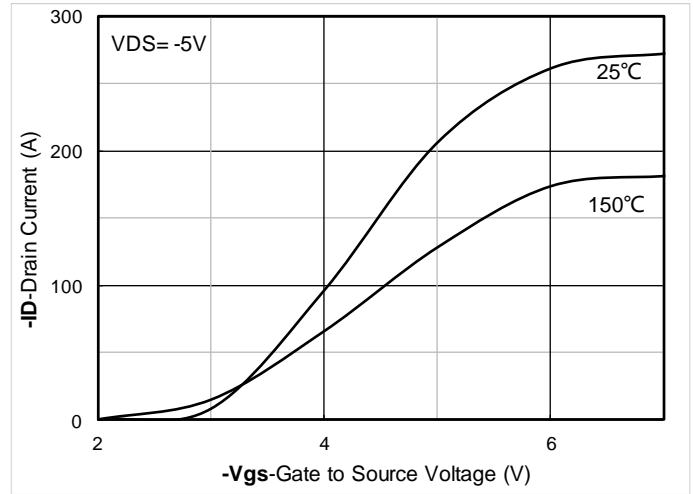


Figure 2. Transfer Characteristics

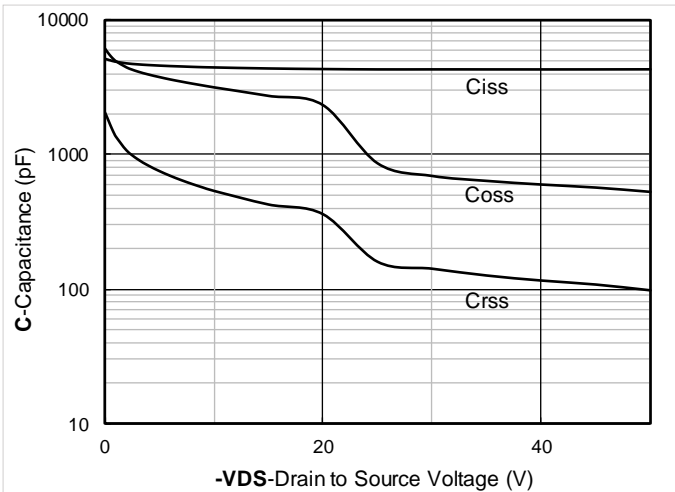


Figure 3. Capacitance Characteristics

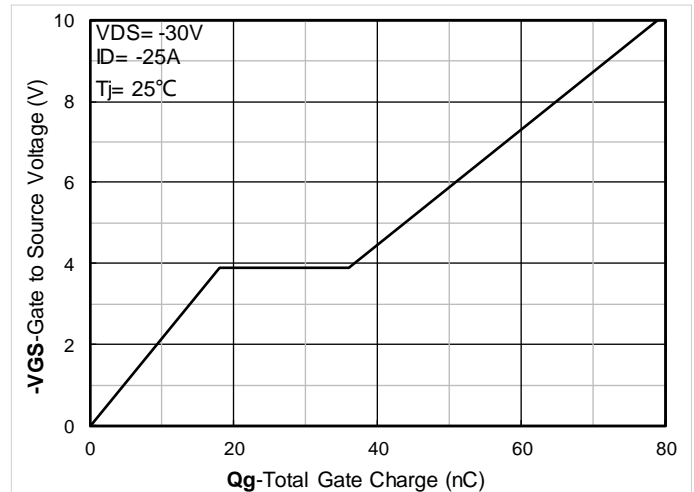


Figure 4. Gate Charge

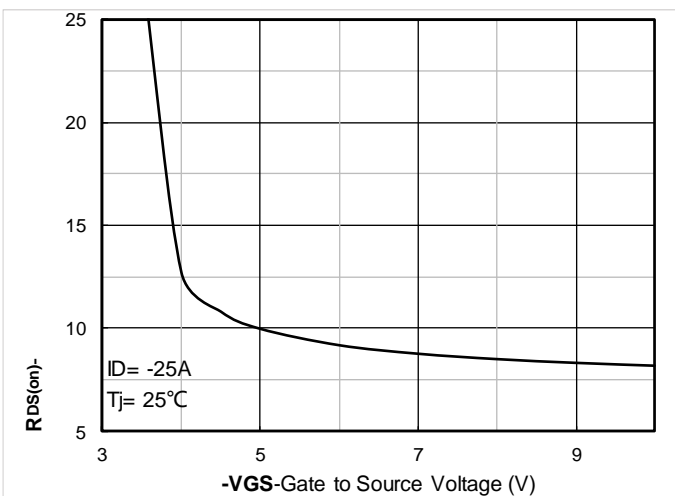


Figure 5. On-Resistance vs Gate to Source Voltage

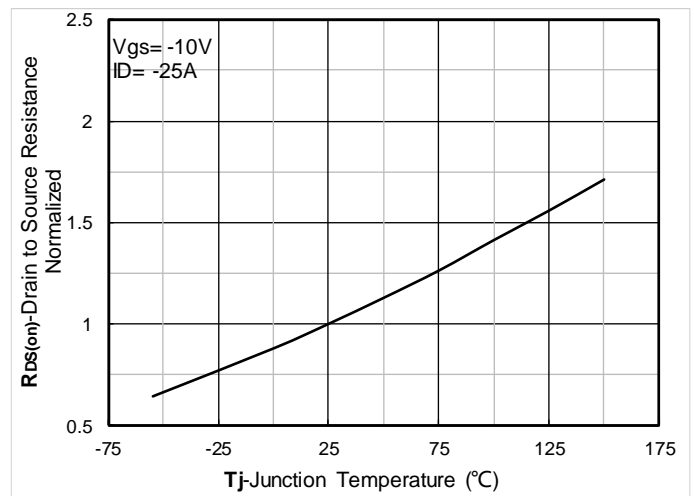


Figure 6. Normalized On-Resistance



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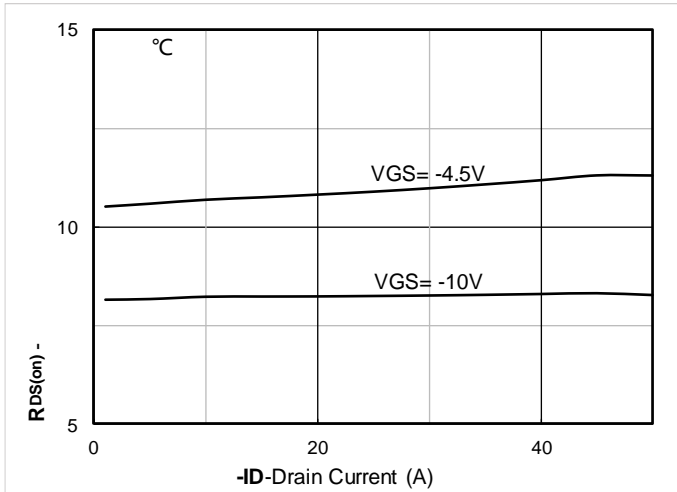


Figure 7. RDS(on) VS Drain Current

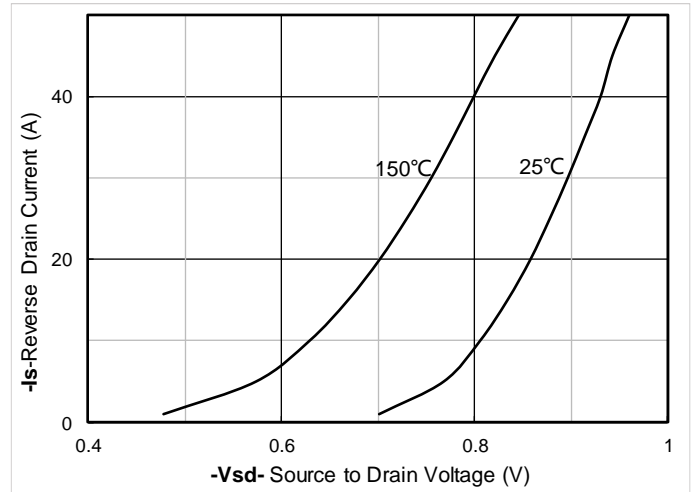


Figure 8. Forward characteristics of reverse diode

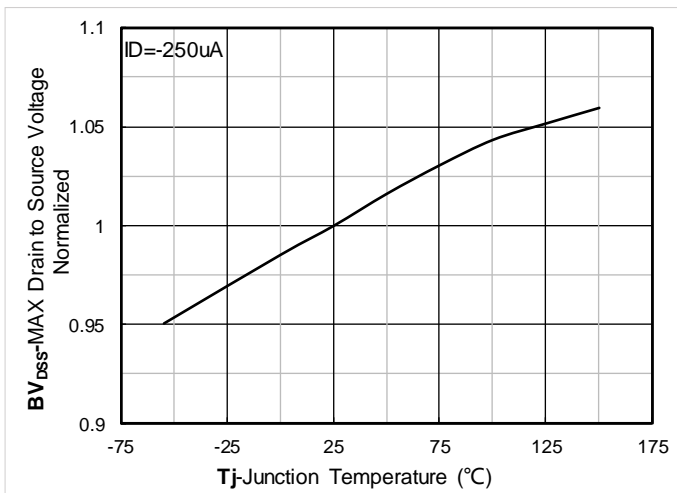


Figure 9. Normalized breakdown voltage

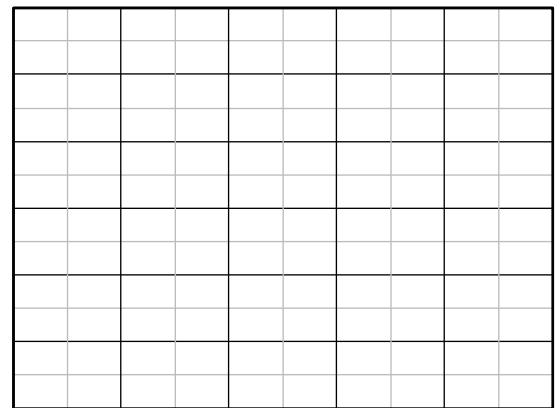


Figure 10. Normalized Threshold voltage

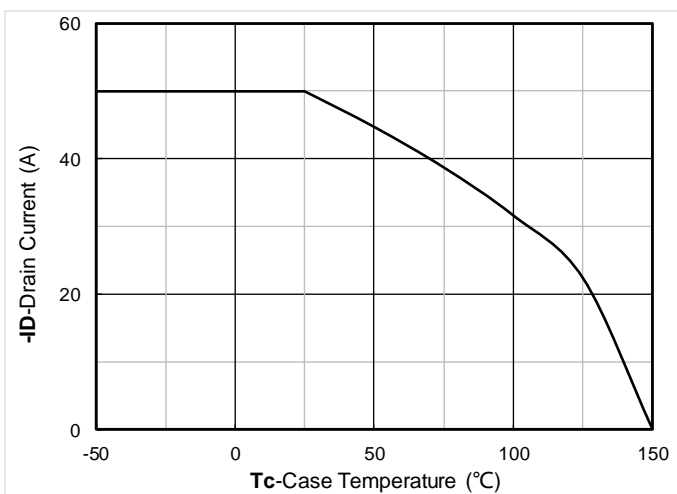


Figure 11. Current dissipation

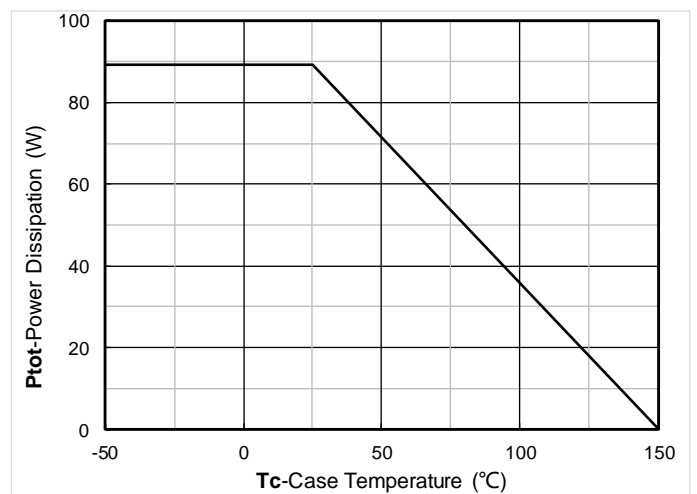


Figure 12. Power dissipation



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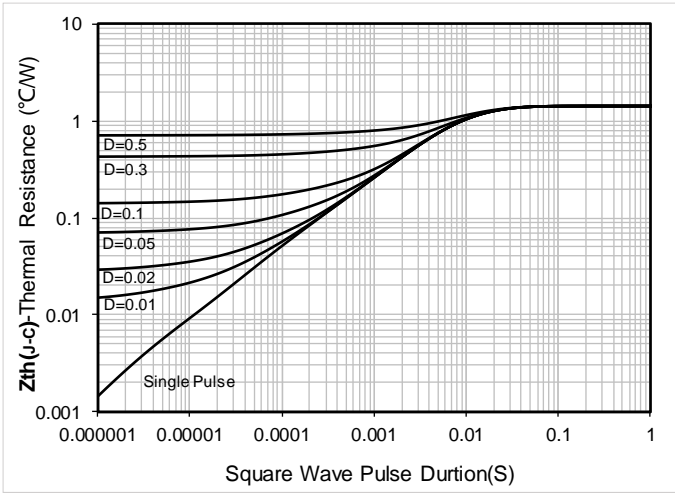


Figure 13. Maximum Transient Thermal Impedance

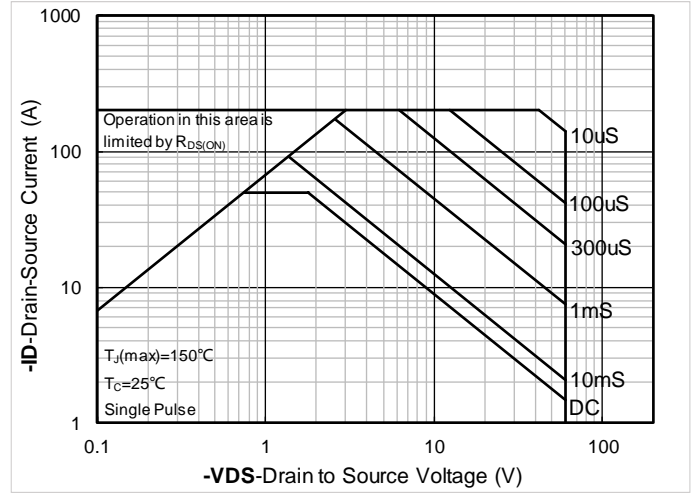
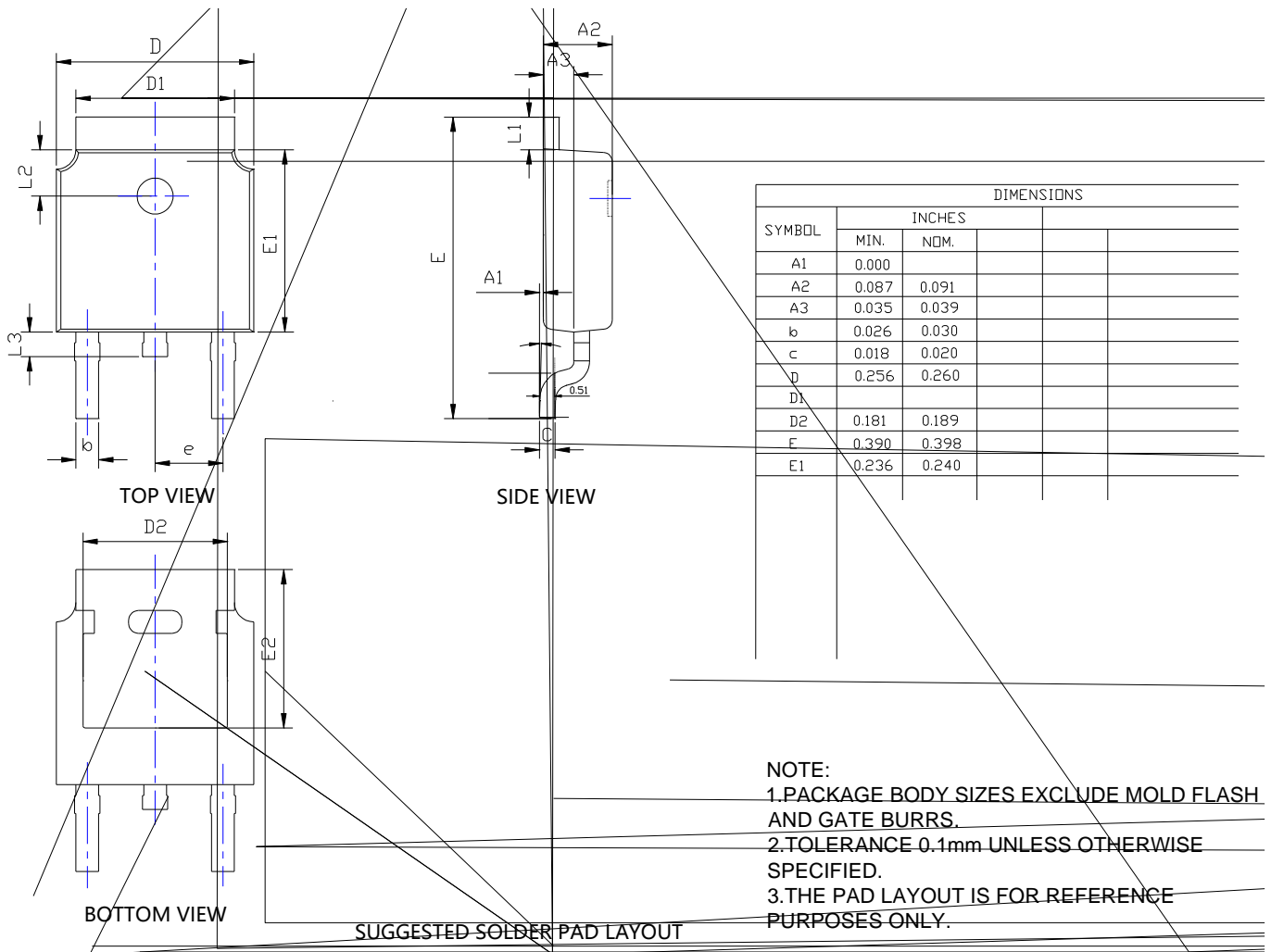


Figure 14. Safe Operation Area



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TO-252-B Package information





YJD50GP06A

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