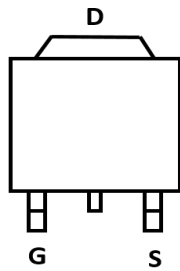
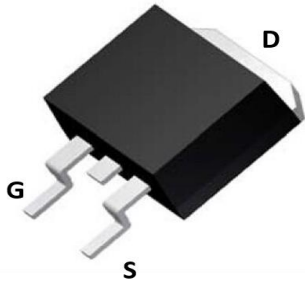
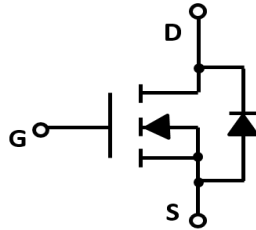


N-Channel Enhancement Mode Field Effect Transistor



TO-263



Product Summary

- V_{DS} 60V
- I_D 150A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) <math>< 5.5\text{mohm}</math>
- 100% UIS Tested
- 100% ∇V_{DS} Tested

General Description

- Trench Power MV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

Applications

- DC-DC Converters
- Power management functions
- Industrial and Motor Drive applications

■ Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	60	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_C=25^\circ\text{C}$	I_D	150	A
	$T_C=100^\circ\text{C}$		105	
Pulsed Drain Current ^A		I_{DM}	500	A
Total Power Dissipation	$T_C=25^\circ\text{C}$	P_D	225	W
	$T_C=100^\circ\text{C}$		112	
Single Pulse Avalanche Energy		E_{AS}	550	mJ
Thermal Resistance Junction-to-Case ^B		$R_{\theta JC}$	0.67	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+175	$^\circ\text{C}$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJB150N06C	F2	YJB150N06C	800	/	8000	13" reel



YJB150N06C

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
					5	uA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	2.0	3.0	4.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =75A		4.6	5.5	mΩ
Diode Forward Voltage	V _{SD}	I _S =40A, V _{GS} =0V		0.8	1.2	V
Maximum Body-Diode Continuous Current	I _S				150	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHZ		4200		pF
Output Capacitance	C _{oss}			475		
Reverse Transfer Capacitance	C _{rss}			207		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =30V, I _D =50A		69		nC
Gate-Source Charge	Q _{gs}			33		
Gate-Drain Charge	Q _{gd}			15		
Reverse Recovery Charge	Q _{rr}	I _F =40A, di/dt=100A/us		98		
Reverse Recovery Time	t _{rr}			53		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =30V, I _D =2A, R _L =15Ω R _{GEN} =3Ω		18		ns
Turn-on Rise Time	t _r			35		
Turn-off Delay Time	t _{D(off)}			44		
Turn-off fall Time	t _f			23		

A. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.

B. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. R_{θJC} is guaranteed by design, while R_{θJA} is determined by the board design. The maximum rating presented here is based on mounting on a 1 in 2 pad of 2oz copper.



■ Typical Performance Characteristics

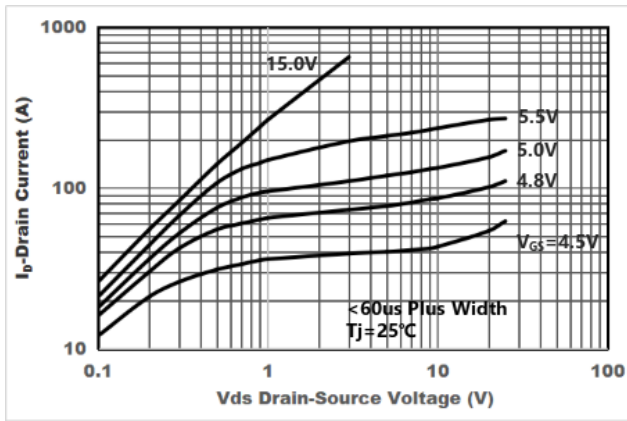


Figure1. Output Characteristics

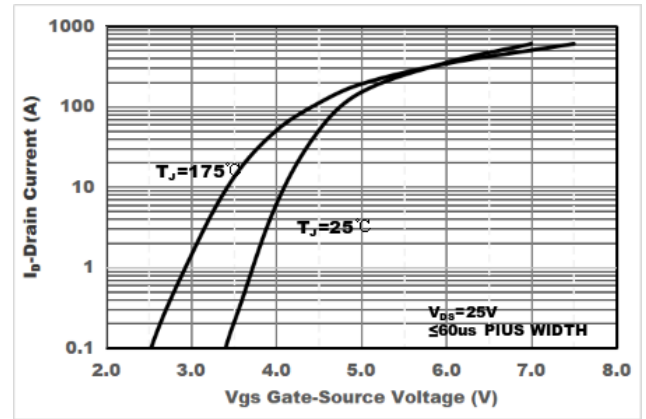


Figure2. Transfer Characteristics

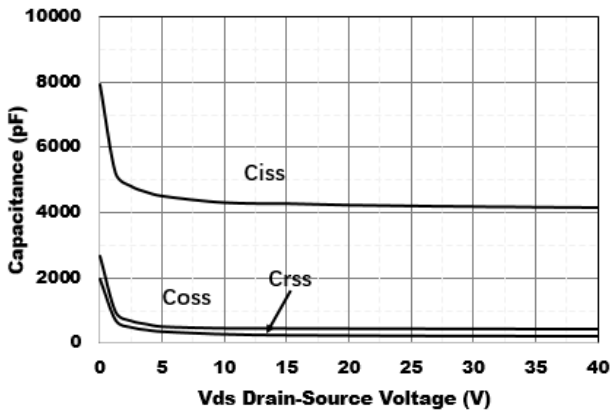


Figure3. Capacitance Characteristics

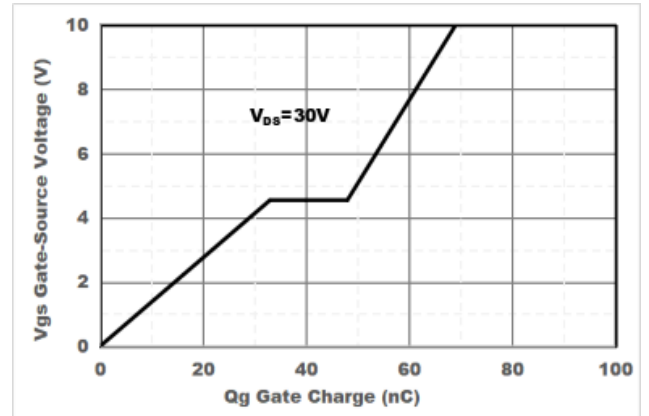


Figure4. Gate Charge

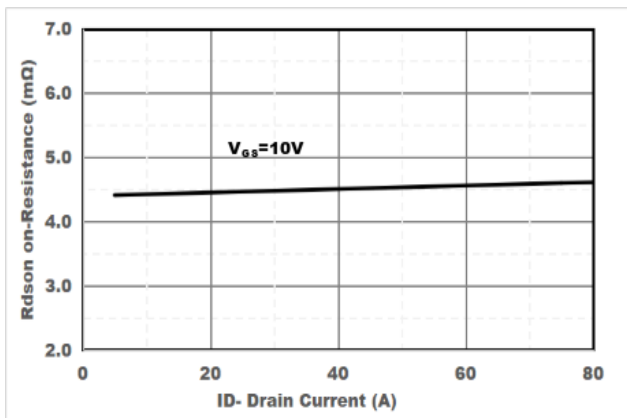


Figure5. Drain-Source on Resistance

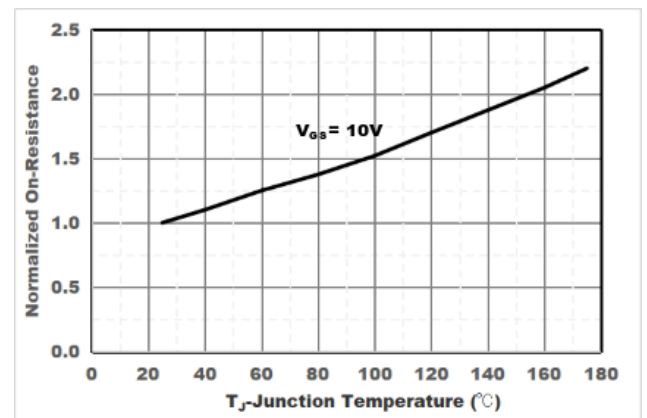


Figure6. Drain-Source on Resistance



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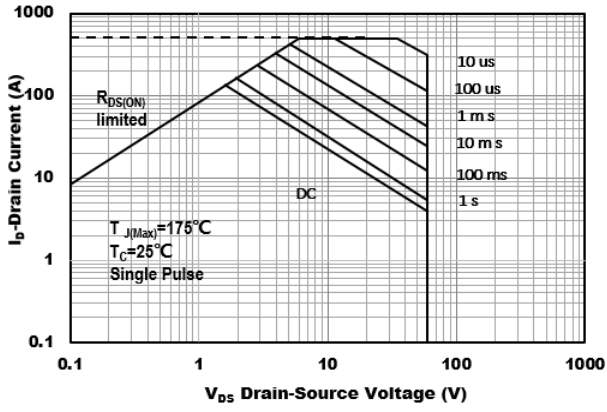


Figure7. Safe Operation Area

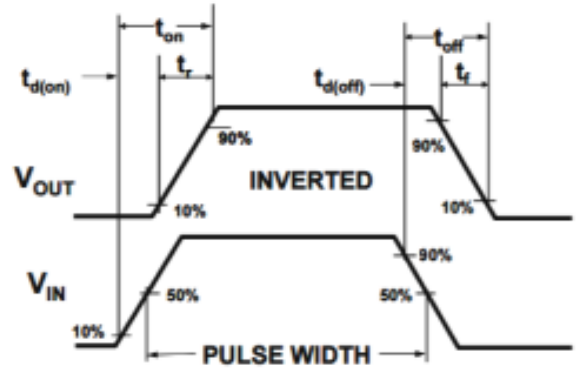
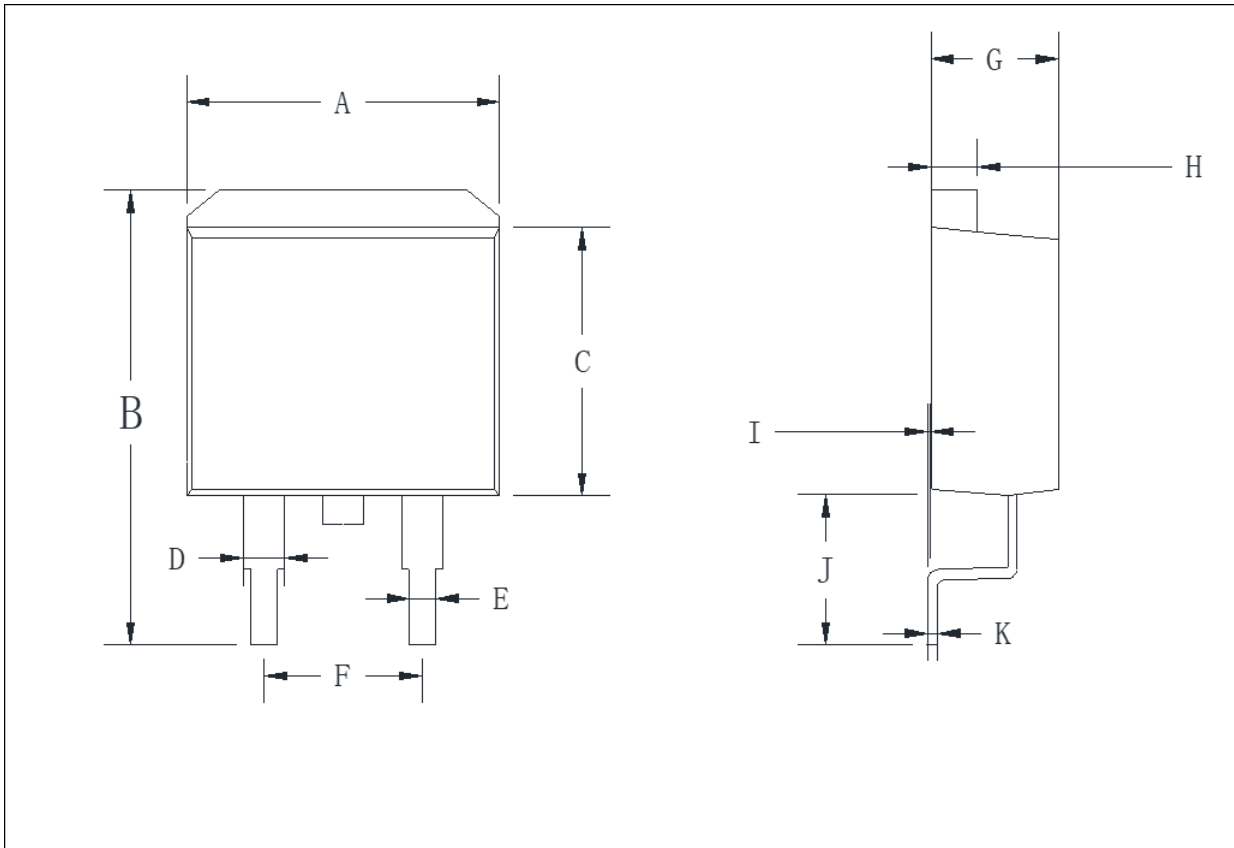


Figure8. Switching wave

■ TO-263 Package information



A	B	C	D	E	F
10.15 ± 0.05	15.0 ± 0.1	8.7 ± 0.05	1.28 ± 0.03	0.82 ± 0.03	5.06 ± 0.03
G	H	I	J	K	L
4.58 ± 0.05	1.27 ± 0.03	0~0.2	5.0 ± 0.10	0.38 ± 0.03	1.85 ± 0.05
M					
$110 \pm 5^\circ$					



YJB150N06C

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