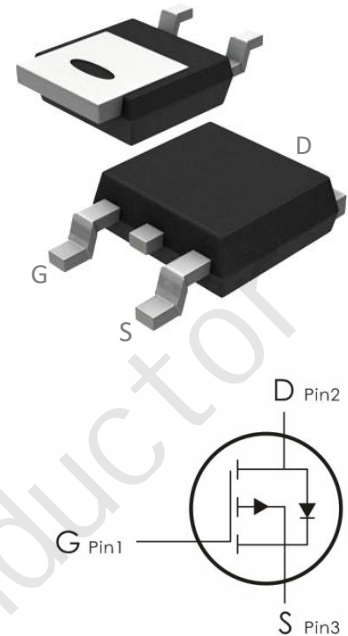


Description:

This P-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge.

It can be used in a wide variety of applications.



Features:

- 1) $V_{DS}=-30V, I_D=-80A, R_{DS(ON)}<7.5\text{ m}\Omega @V_{GS}=-10\text{ V}$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(ON)}$.
- 5) Excellent package for good heat dissipation.

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

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^\circ\text{C}$	-80	A
	Continuous Drain Current- $T_C=100^\circ\text{C}$	-49	A
I_{DM}	Pulsed Drain Current ^{note1}	-260	A
E_{AS}	Single Pulsed Avalanche Energy ^{note2}	164	mJ
P_D	Total Power Dissipation	84	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +175	$^\circ\text{C}$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.5	$^\circ\text{C}/\text{W}$

Electrical Characteristics: ($T_J=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\ \mu A$	-30	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS}=0V, V_{DS}=-30V, T_J=25^\circ\text{C}$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0A$	---	---	± 100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\ \mu A$	-1.0	-1.6	-2.5	V
$R_{DS(on)}$	Static Drain-Source On-Resistance ^{note3}	$V_{GS}=-10V, I_D=-30A$	---	5.8	7.5	m Ω
		$V_{GS}=-4.5V, I_D=-20A$	---	9	12.6	
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=-15V, V_{GS}=0V, f=1\text{MHz}$	---	4550	---	pF
C_{oss}	Output Capacitance		---	525	---	
C_{rss}	Reverse Transfer Capacitance		---	480	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	$V_{DD}=-15V, I_D=-30A,$ $V_{GS}=-10V, R_G=2.5\ \Omega$	---	19	---	ns
t_r	Rise Time		---	15	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	65	---	ns
t_f	Fall Time		---	36	---	ns
Q_g	Total Gate Charge	$V_{GS}=-10V, V_{DS}=-15V,$ $I_D=-20A$	---	45	---	nC
Q_{gs}	Gate-Source Charge		---	8	---	nC
Q_{gd}	Gate-Drain "Miller" Charge		---	12	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Drain Diode Forward Voltage	$V_{GS}=0V, I_S=-30A, T_J=25^\circ\text{C}$	---	-0.8	-1.2	V

I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	-80	A
I_{SM}	Pulsed Source Current		---	---	-240	A

- Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
 2. EAS condition: $T_J=25^\circ C$, $V_{DD}=-15V$, $V_G=-10V$, $R_G=25\Omega$, $L=0.5mH$, $I_{AS}=-24A$
 3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Typical Characteristics: ($T_C=25^\circ C$ unless otherwise noted)

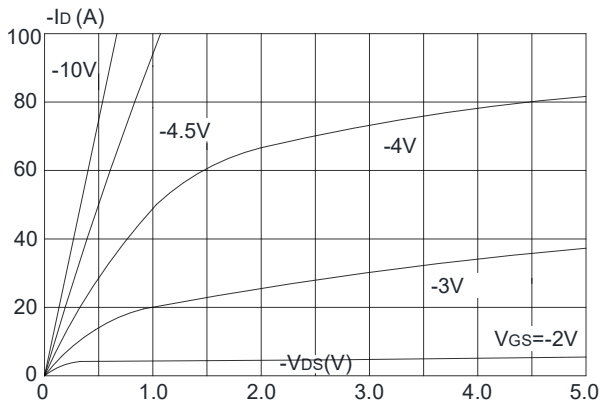


Figure 1: Output Characteristics

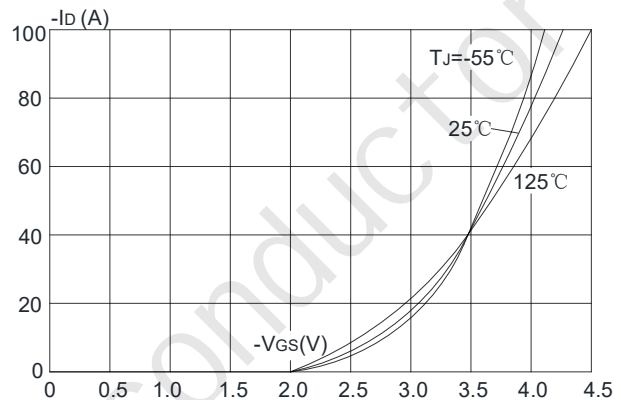


Figure 2: Typical Transfer Characteristics

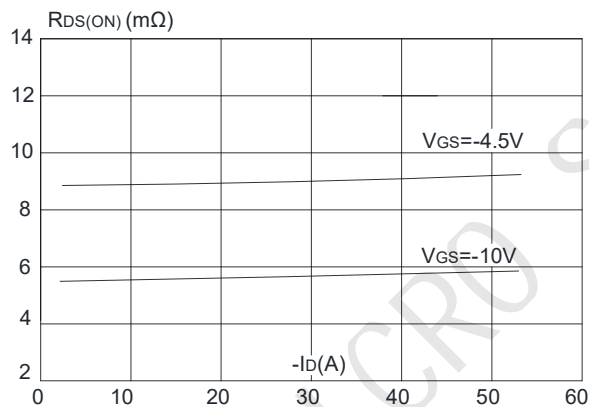


Figure 3: On-resistance vs. Drain Current

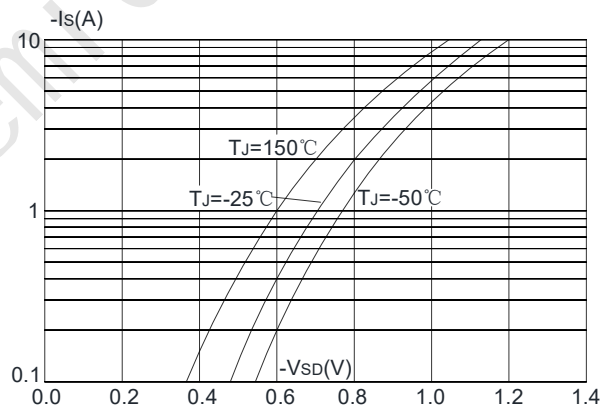


Figure 4: Body Diode Characteristics

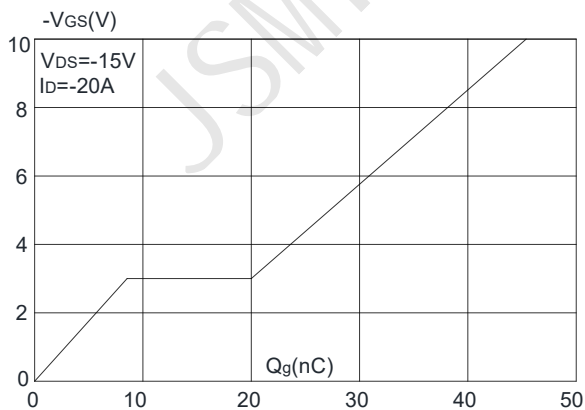


Figure 5: Gate Charge Characteristics

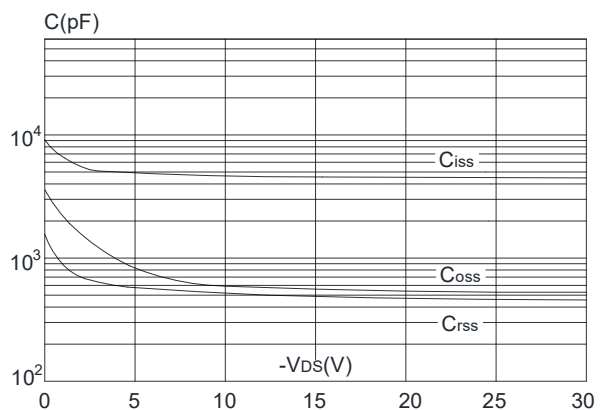


Figure 6: Capacitance Characteristics

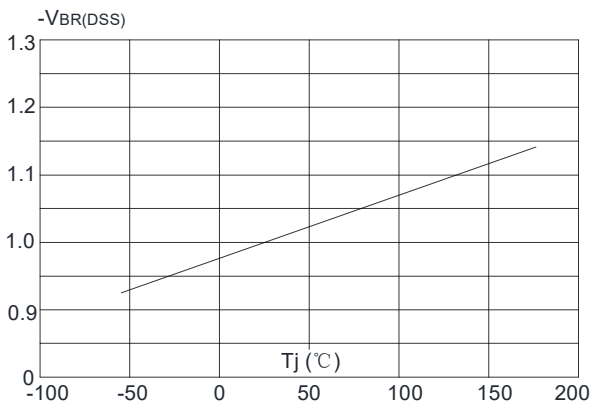


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

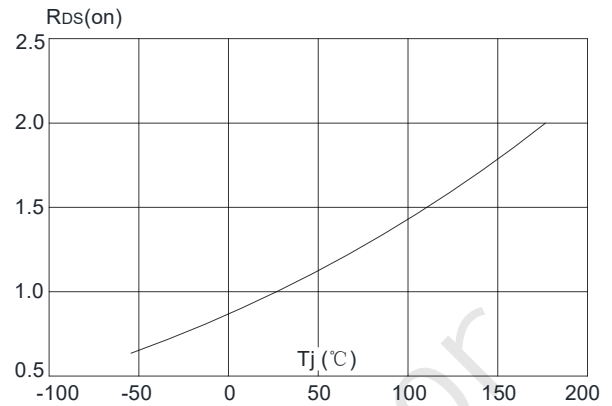


Figure 8: Normalized on Resistance vs. Junction Temperature

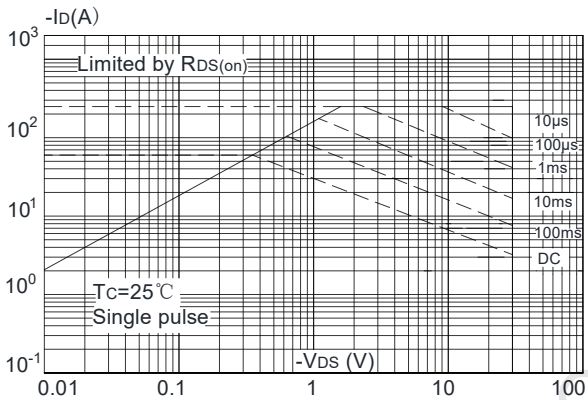


Figure 9: Maximum Safe Operating Area

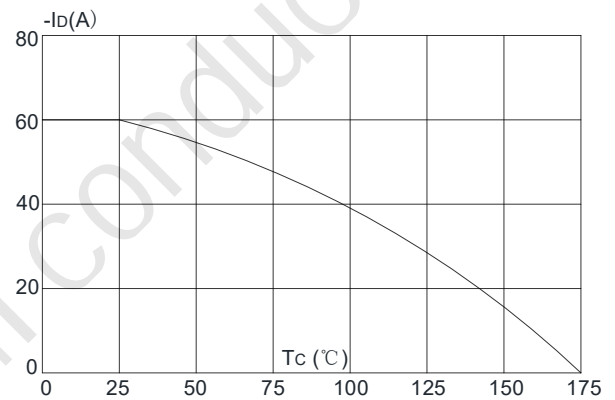


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

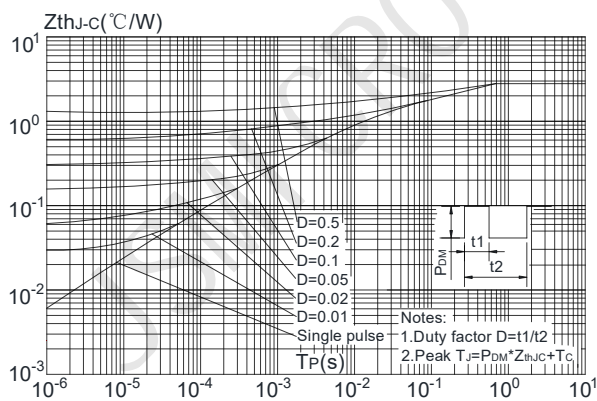
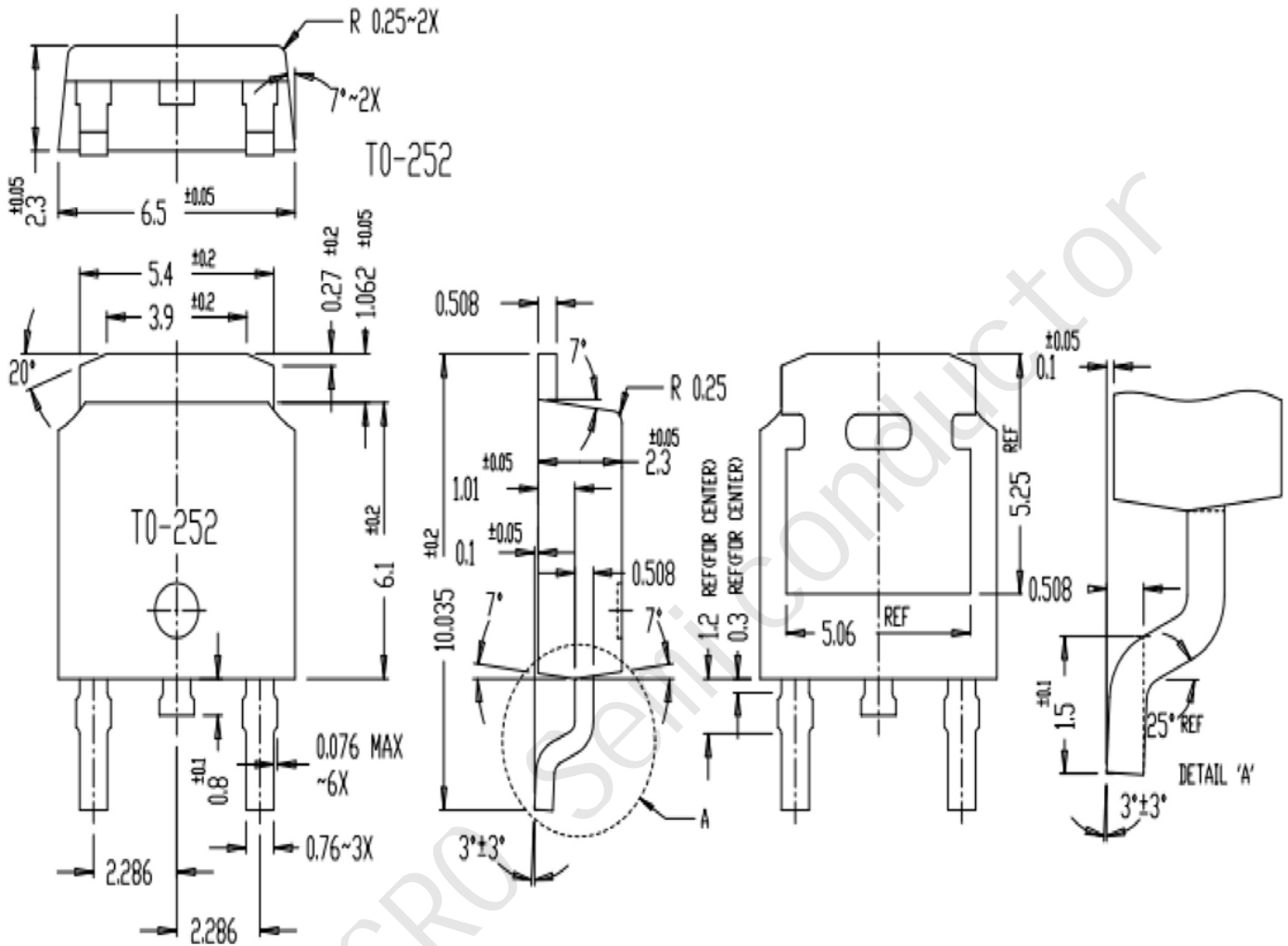


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

外形尺寸图 / Package Dimensions



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