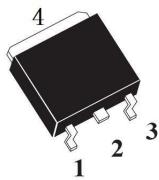


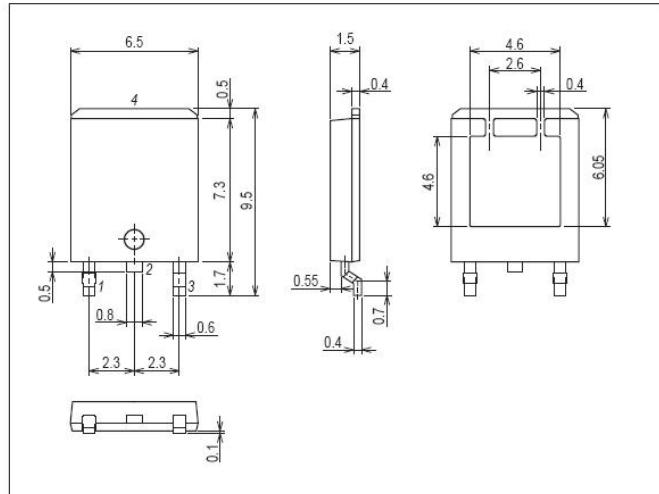
Features

- Low On resistance.
- 2.5V drive.
- RoHS compliant.



Package Dimensions

TO-252



Specifications

Absolute Maximum Ratings at T_a=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		25	V
Gate-to-Source Voltage	V _{GSS}		±12	V
Drain Current (DC)	I _D		75	A
Drain Current (Pulse)	I _{DP}	PW≤10μS, duty cycle≤1%	300	A
Power Dissipation	P _D		57	W
Storage Temperature	T _{stg}		-55~+175	°C

Electrical Characteristics at T_a=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =250μA, V _{GS} =0V	25	-	-	V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V	-	-	1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	0.7	1.1	V
Static Drain-to-Source On-State Resistance	R _{D(S)ON}	I _D =30A, V _{GS} =4.5V	-	4.3	6	mΩ
	R _{D(S)ON}	I _D =20A, V _{GS} =2.5V	-	6.2	10	mΩ
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz	-	2800	-	pF
Output Capacitance	C _{oss}		-	353	-	pF
Reverse Transfer Capacitance	C _{rss}		-	265	-	pF

Electrical Characteristics at $T_a=25^{\circ}\text{C}$ (Continued)

Parameter	Symbol	Conditions	Ratings			Unit
			min	Typ	max	
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=10\text{V}, I_D=20\text{A}, R_{GEN}=3\Omega,$ $V_{GS}=4.5\text{V}$	-	17	-	nS
Rise Time	t_r		-	49	-	nS
Turn-off Delay Time	$t_{d(off)}$		-	74	-	nS
Fall Time	t_f		-	26	-	nS
Total Gate Charge	Q_g	$V_{DS}=15\text{V}, V_{GS}=4.5\text{V}, I_D=20\text{A}$	-	32	-	nC
Gate-to-Source Charge	Q_{gs}		-	3	-	nC
Gate-to-Drain "Miller" Charge	Q_{gd}		-	11	-	nC
Diode Forward Voltage	V_{SD}	$I_S=30\text{A}, V_{GS}=0\text{V}$	-	1.2	-	V

Test Circuit

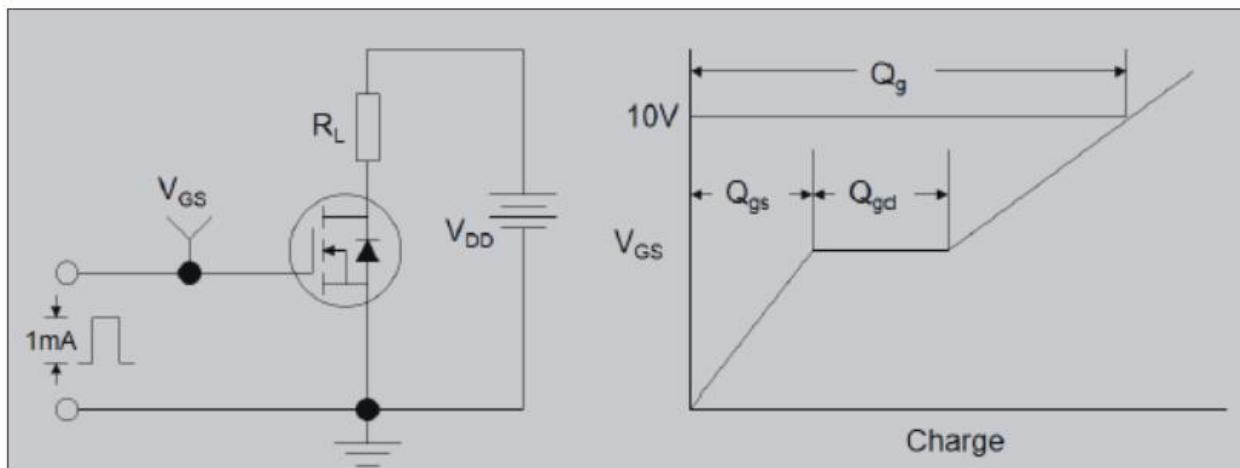


Figure 1: Gate Charge Test Circuit & Waveform

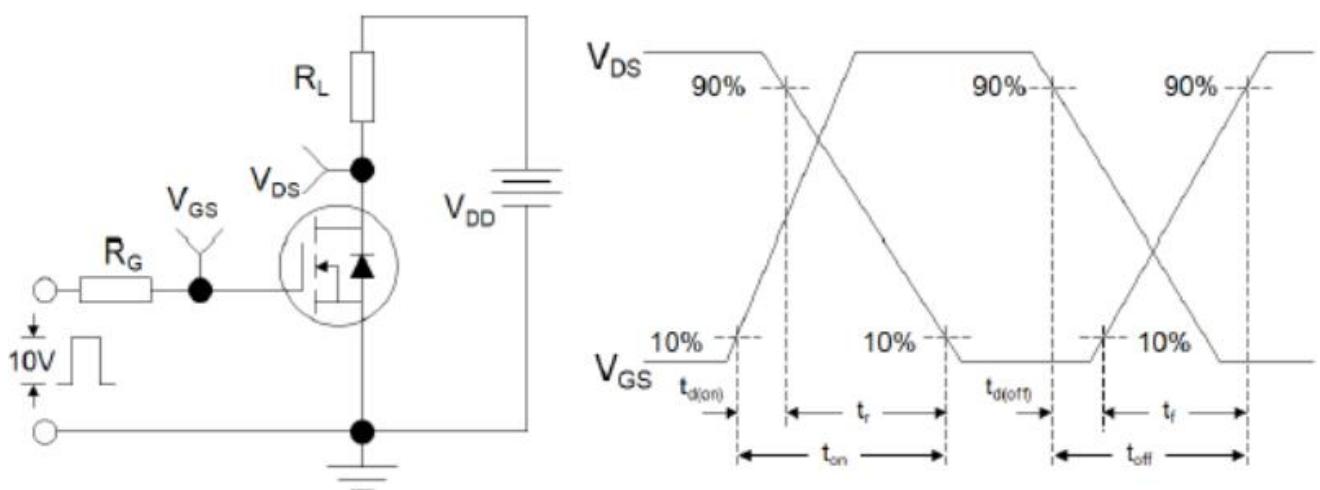


Figure 2: Resistive Switching Test Circuit & Waveforms

Typical Characteristics at $T_a=25^{\circ}\text{C}$

Figure 1: Output Characteristics

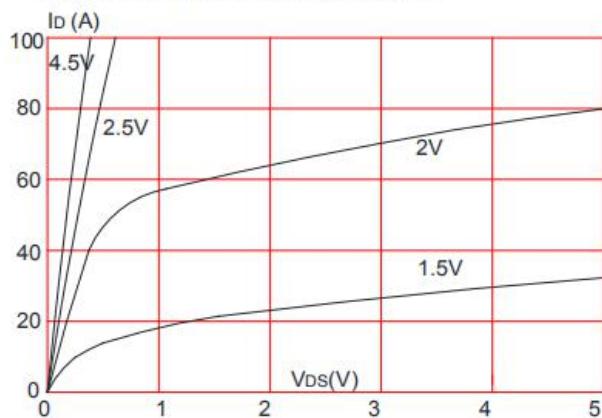


Figure 2: Typical Transfer Characteristics

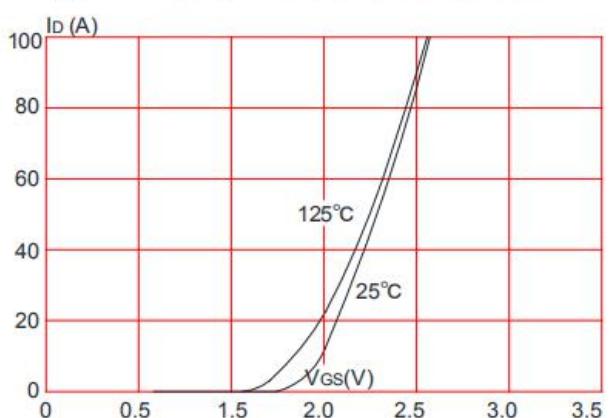


Figure 3: On-resistance vs. Drain Current

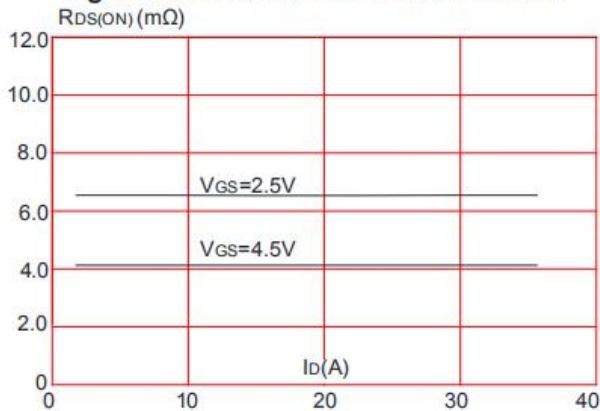


Figure 4: Body Diode Characteristics

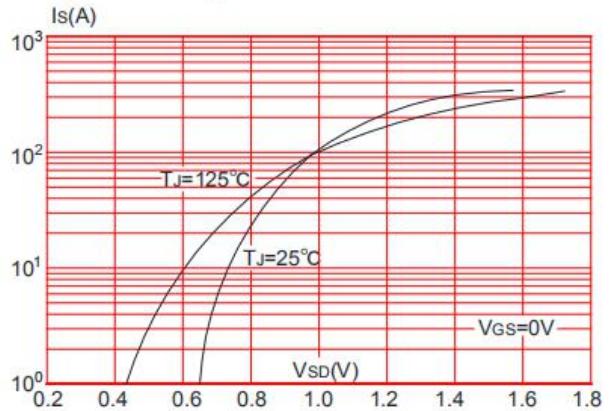


Figure 5: Gate Charge Characteristics

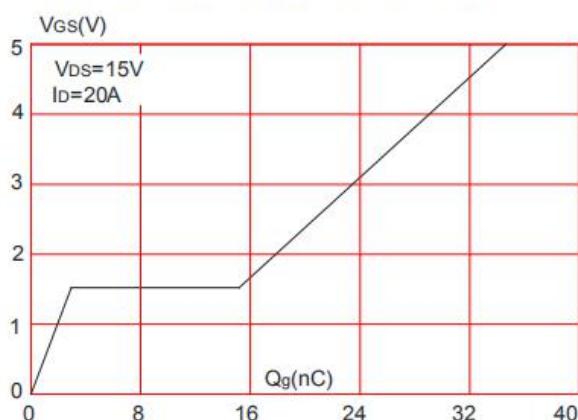
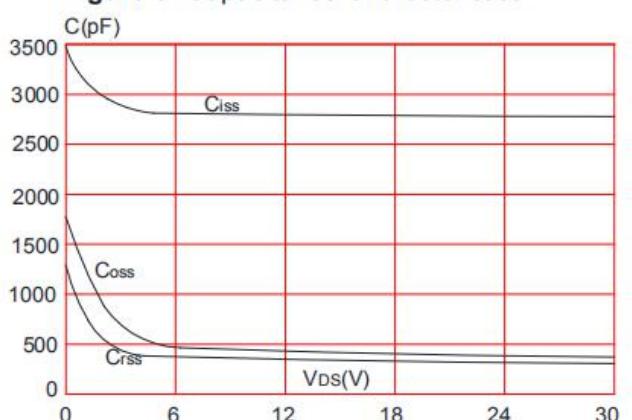


Figure 6: Capacitance Characteristics



Typical Characteristics at $T_a=25^{\circ}\text{C}$ (Continued)

Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

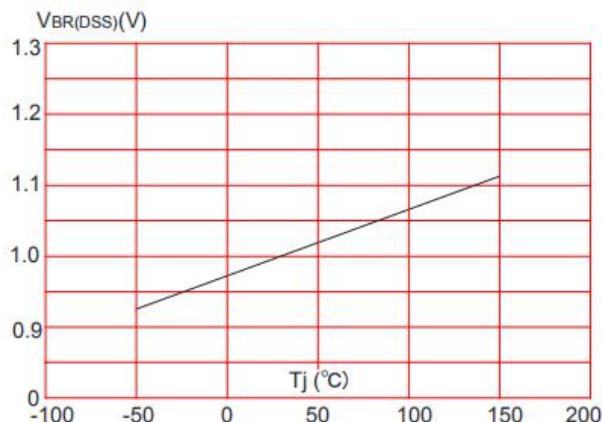


Figure 9: Maximum Safe Operating Area

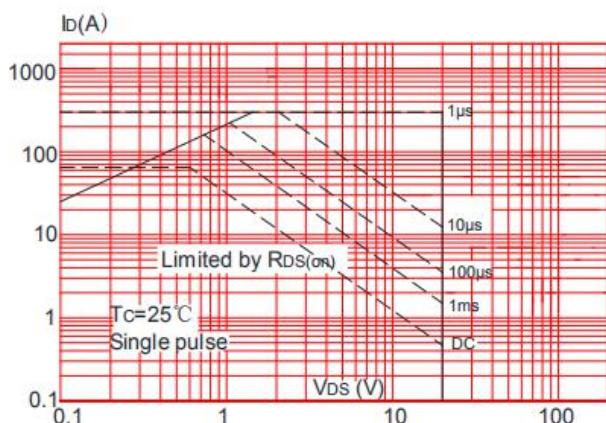


Figure 11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

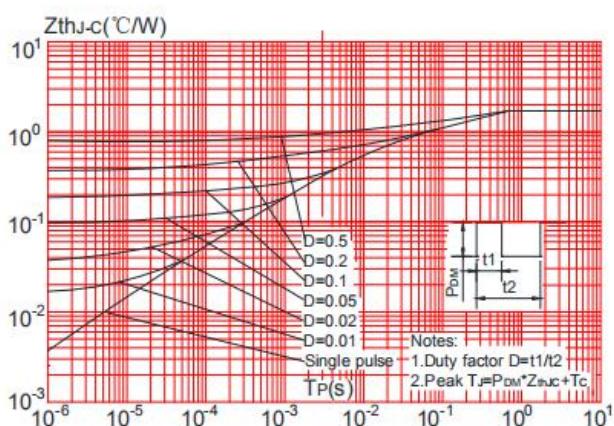


Figure 8: Normalized on Resistance vs. Junction Temperature

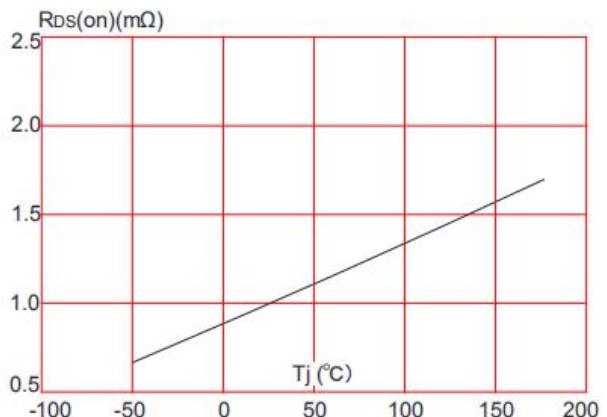


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

