

DYNAMIC CHARACTERISTICS

APT8015JVFR

Symbol	Characteristic	Test Conditions	MIN	TYP	MAX	UNIT
C_{iss}	Input Capacitance	$V_{GS} = 0V$ $V_{DS} = 25V$ $f = 1 \text{ MHz}$		14715	17650	pF
C_{oss}	Output Capacitance			1470	2050	
C_{rss}	Reverse Transfer Capacitance			794	1190	
Q_g	Total Gate Charge ③	$V_{GS} = 10V$ $V_{DD} = 0.5 V_{DSS}$ $I_D = I_D [\text{Cont.}] @ 25^\circ\text{C}$		690	1035	nC
Q_{gs}	Gate-Source Charge			75	110	
Q_{gd}	Gate-Drain ("Miller") Charge			275	410	
$t_{d(on)}$	Turn-on Delay Time	$V_{GS} = 15V$ $V_{DD} = 0.5 V_{DSS}$ $I_D = I_D [\text{Cont.}] @ 25^\circ\text{C}$ $R_G = 0.6\Omega$		22	44	ns
t_r	Rise Time			20	40	
$t_{d(off)}$	Turn-off Delay Time			97	145	
t_f	Fall Time			15	30	

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

Symbol	Characteristic / Test Conditions	MIN	TYP	MAX	UNIT
I_S	Continuous Source Current (Body Diode)			44	Amps
I_{SM}	Pulsed Source Current ① (Body Diode)			176	
V_{SD}	Diode Forward Voltage ② ($V_{GS} = 0V$, $I_S = -I_D [\text{Cont.}]$)			1.3	Volts
dv/dt	Peak Diode Recovery dv/dt ⑤			18	V/ns
t_{rr}	Reverse Recovery Time ($I_S = -I_D [\text{Cont.}]$, $di/dt = 100A/\mu s$)	$T_j = 25^\circ\text{C}$		300	ns
		$T_j = 125^\circ\text{C}$		600	
Q_{rr}	Reverse Recovery Charge ($I_S = -I_D [\text{Cont.}]$, $di/dt = 100A/\mu s$)	$T_j = 25^\circ\text{C}$	2.5		μC
		$T_j = 125^\circ\text{C}$	17.7		
I_{RRM}	Peak Recovery Current ($I_S = -I_D [\text{Cont.}]$, $di/dt = 100A/\mu s$)	$T_j = 25^\circ\text{C}$	16.1		Amps
		$T_j = 125^\circ\text{C}$	36.2		

THERMAL/PACKAGE CHARACTERISTICS

Symbol	Characteristic	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction to Case			0.18	$^\circ\text{C/W}$
$R_{\theta JA}$	Junction to Ambient			40	
$V_{isolation}$	RMS Voltage (50-60 Hz Sinusoidal Waveform From Terminals to Mounting Base for 1 Min.)	2500			Volts
Torque	Maximum Torque for Device Mounting Screws and Electrical Terminations.			13	lb•in

① Repetitive Rating: Pulse width limited by maximum junction temperature.

② Pulse Test: Pulse width < 380 μs , Duty Cycle < 2%

③ See MIL-STD-750 Method 3471

④ Starting $T_j = +25^\circ\text{C}$, $L = 3.72\text{mH}$, $R_G = 25\Omega$, Peak $I_L = 44\text{A}$

⑤ $I_S \leq -I_D [\text{Cont.}]$, $di/dt = 100A/\mu s$, $V_{DD} = V_{DSS}$, $T_j = 150^\circ\text{C}$, $R_G = 2.0\Omega$, $V_R = 200\text{V}$

APT Reserves the right to change, without notice, the specifications and information contained herein.

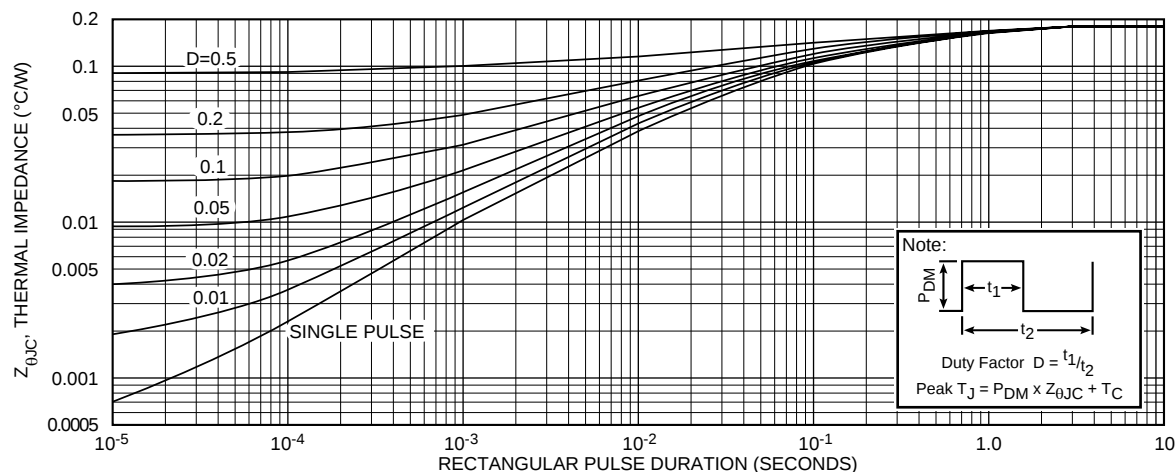


FIGURE 1, MAXIMUM EFFECTIVE TRANSIENT THERMAL IMPEDANCE, JUNCTION-TO-CASE vs PULSE DURATION

APT8015JVFR

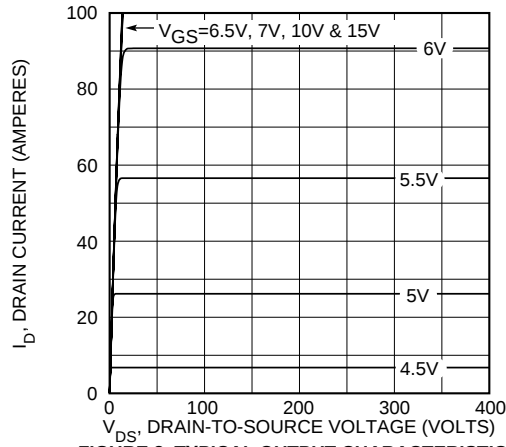


FIGURE 2, TYPICAL OUTPUT CHARACTERISTICS

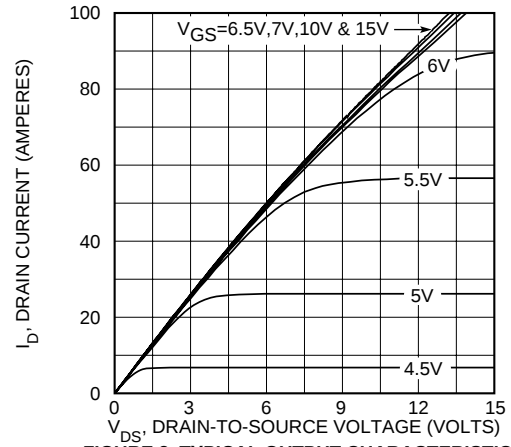


FIGURE 3, TYPICAL OUTPUT CHARACTERISTICS

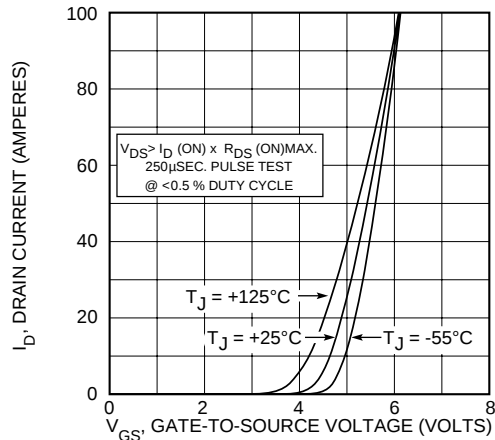


FIGURE 4, TYPICAL TRANSFER CHARACTERISTICS

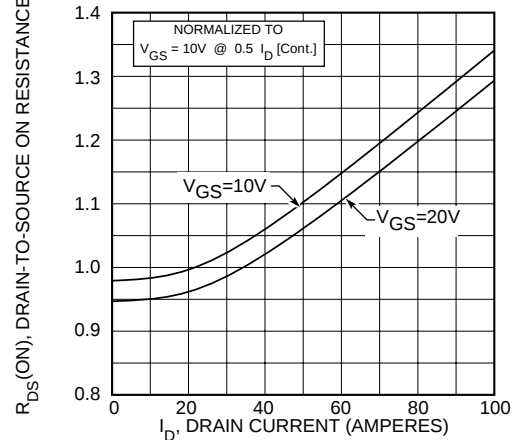


FIGURE 5, $R_{DS(ON)}$ vs DRAIN CURRENT

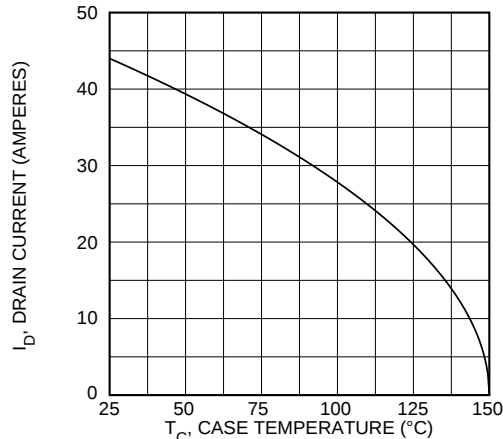


FIGURE 6, MAXIMUM DRAIN CURRENT vs CASE TEMPERATURE

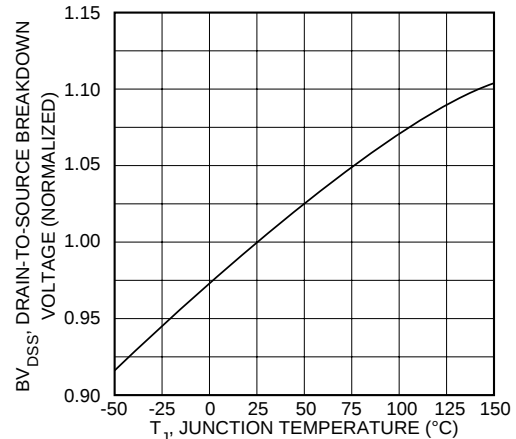


FIGURE 7, BREAKDOWN VOLTAGE vs TEMPERATURE

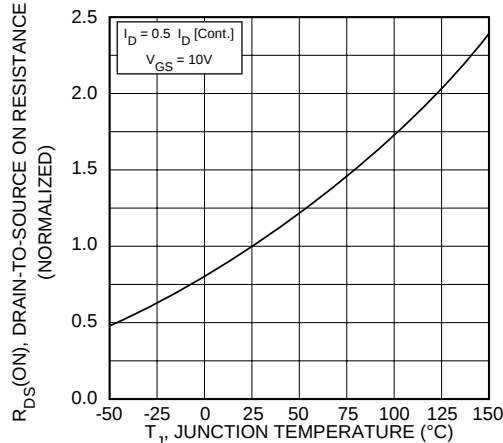


FIGURE 8, ON-RESISTANCE vs. TEMPERATURE

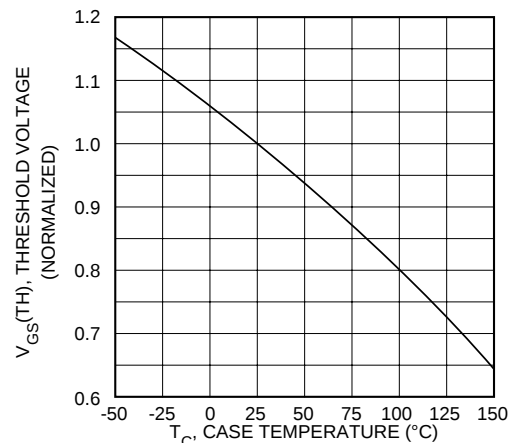


FIGURE 9, THRESHOLD VOLTAGE vs TEMPERATURE

