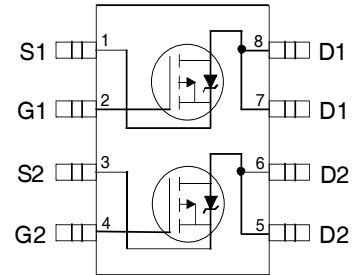


Features

- Trench Technology
- Ultra Low On-Resistance
- Dual P-Channel MOSFET
- Available in Tape & Reel
- Lead-Free



Top View

V_{DSS}	$R_{DS(on) \max}$	I_D
-30V	$21m\Omega @ V_{GS} = -10V$	-8.0A
	$32m\Omega @ V_{GS} = -4.5V$	-6.8A

Absolute Maximum Ratings

	Parameter	Max.	Units
V_{DS}	Drain-Source Voltage	-30	V
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS} @ -10V$	-8.0	A
$I_D @ T_A = 70^\circ C$	Continuous Drain Current, $V_{GS} @ -10V$	-6.4	
I_{DM}	Pulsed Drain Current ^①	-32	
$P_D @ T_A = 25^\circ C$	Maximum Power Dissipation ^③	2.0	W
$P_D @ T_A = 70^\circ C$	Maximum Power Dissipation ^③	1.3	W
	Linear Derating Factor	16	mW/°C
V_{GS}	Gate-to-Source Voltage	± 20	V
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to + 150	°C

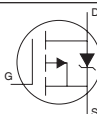
Thermal Resistance

	Parameter	Max.	Units
$R_{\theta JA}$	Maximum Junction-to-Ambient ^③	62.5	°C/W

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

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	-30	—	—	V	$V_{GS} = 0V, I_D = -250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	-0.018	—	V/ $^\circ\text{C}$	Reference to 25°C , $I_D = -1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	17	21	m Ω	$V_{GS} = -10V, I_D = -8.0A$ ②
		—	26.8	32		$V_{GS} = -4.5V, I_D = -6.8A$ ②
$V_{GS(th)}$	Gate Threshold Voltage	-1.0	—	-2.5	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
g_{fs}	Forward Transconductance	12	—	—	S	$V_{DS} = -10V, I_D = -8.0A$
I_{DSS}	Drain-to-Source Leakage Current	—	—	-15	μA	$V_{DS} = -24V, V_{GS} = 0V$
		—	—	-25		$V_{DS} = -24V, V_{GS} = 0V, T_J = 70^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	$V_{GS} = -20V$
	Gate-to-Source Reverse Leakage	—	—	100		$V_{GS} = 20V$
Q_g	Total Gate Charge	—	52	78	nC	$I_D = -8.0A$
Q_{gs}	Gate-to-Source Charge	—	9.8	—		$V_{DS} = -15V$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	8.3	—		$V_{GS} = -10V$
$t_{d(on)}$	Turn-On Delay Time	—	13	20	ns	$V_{DD} = -15V, V_{GS} = -10.0V$
t_r	Rise Time	—	15	23		$I_D = -1.0A$
$t_{d(off)}$	Turn-Off Delay Time	—	198	297		$R_G = 6.0\Omega$
t_f	Fall Time	—	98	147		$R_D = 15\Omega$ ②
C_{iss}	Input Capacitance	—	2675	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	409	—		$V_{DS} = -25V$
C_{rss}	Reverse Transfer Capacitance	—	262	—		$f = 1.0\text{MHz}$

Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	-2.0	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	-32		
V_{SD}	Diode Forward Voltage	—	—	-1.2	V	$T_J = 25^\circ\text{C}, I_S = -2.0A, V_{GS} = 0V$ ②
t_{rr}	Reverse Recovery Time	—	37	56	ns	$T_J = 25^\circ\text{C}, I_F = -2.0A$
Q_{rr}	Reverse Recovery Charge	—	36	54	nC	$di/dt = -100A/\mu s$ ②

Notes:

- ① Repetitive rating; pulse width limited by max. junction temperature.
- ② Pulse width $\leq 400\mu s$; duty cycle $\leq 2\%$.
- ③ Surface mounted on FR-4 board, $t \leq 10\text{sec}$.

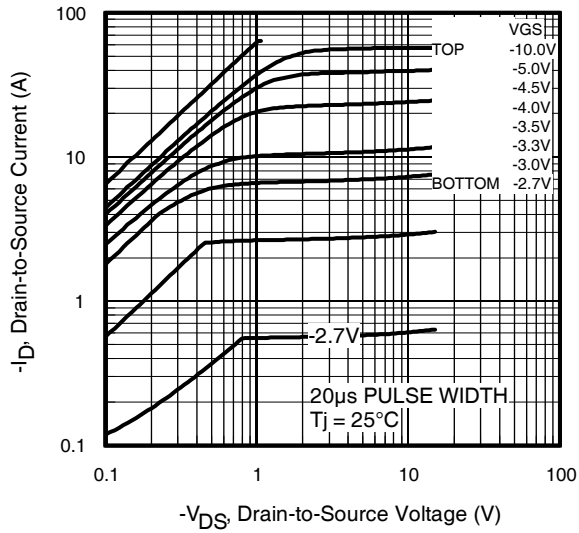


Fig 1. Typical Output Characteristics

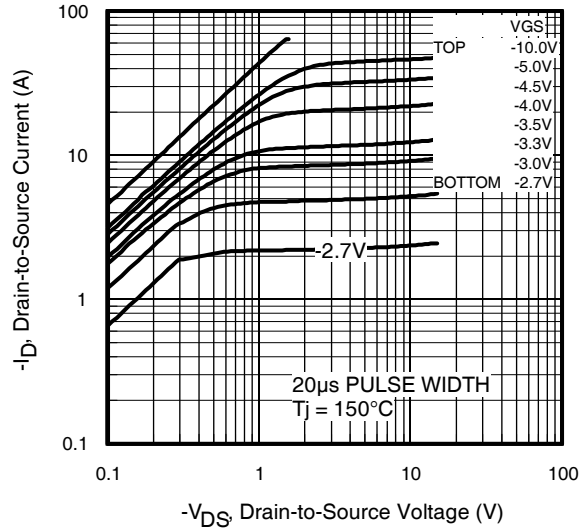


Fig 2. Typical Output Characteristics

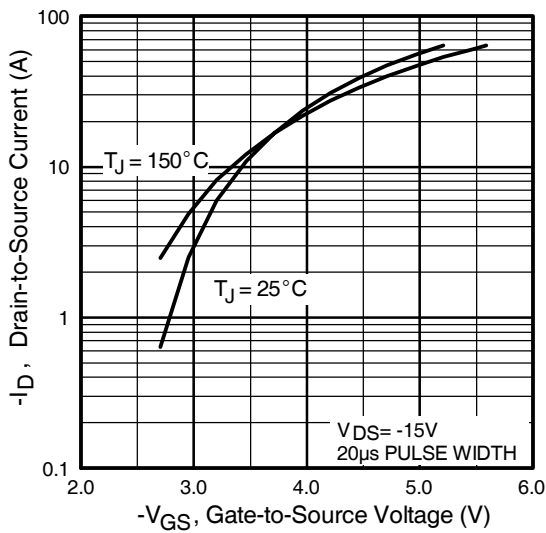


Fig 3. Typical Transfer Characteristics

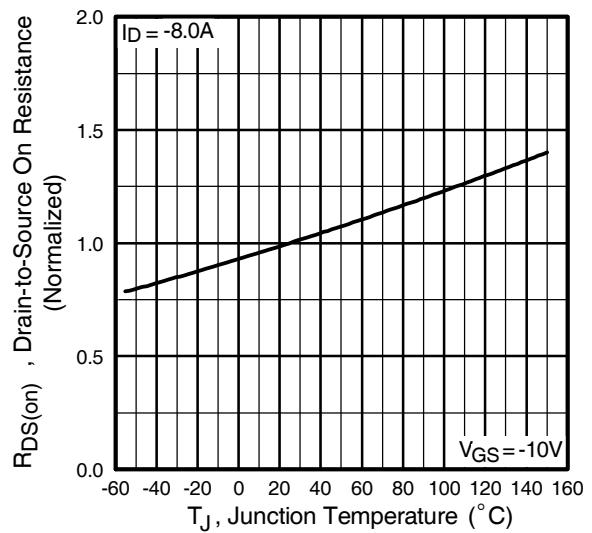


Fig 4. Normalized On-Resistance Vs. Temperature

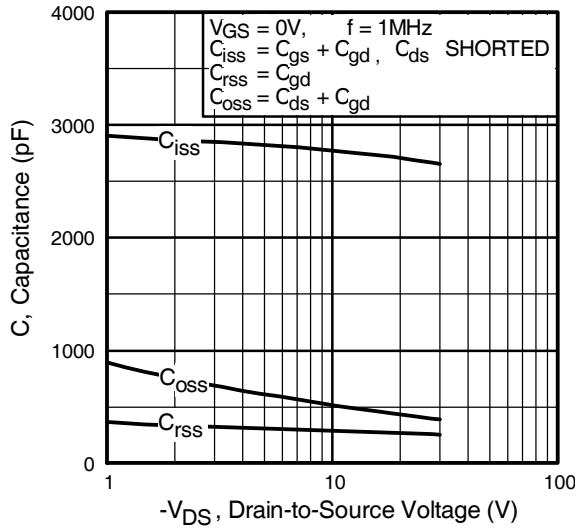


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

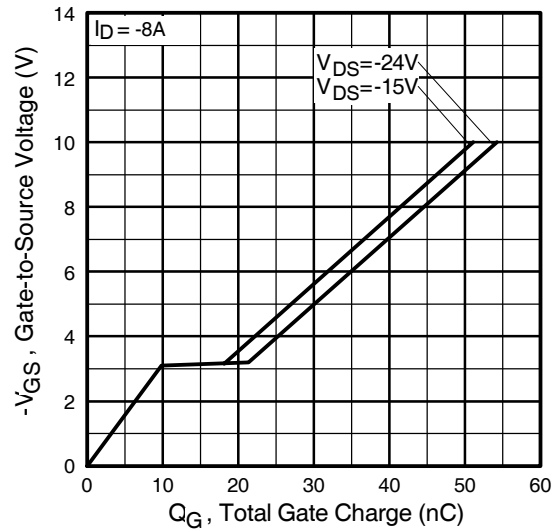


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

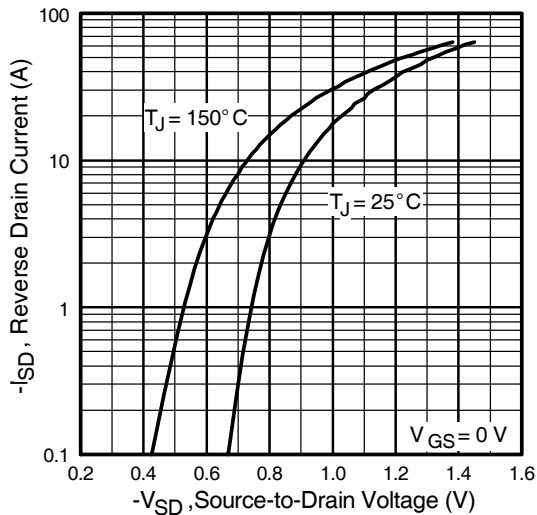


Fig 7. Typical Source-Drain Diode Forward Voltage

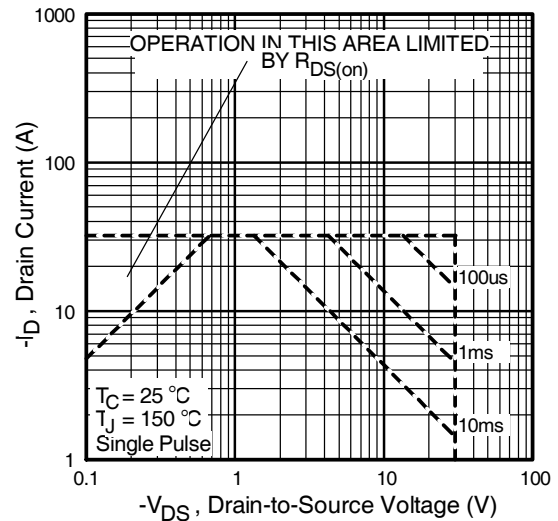


Fig 8. Maximum Safe Operating Area

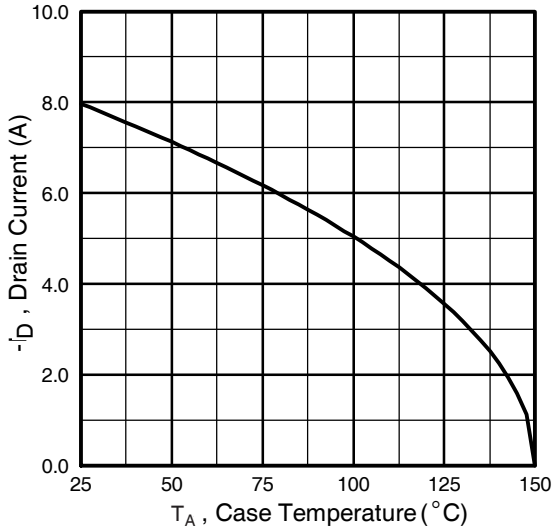


Fig 9. Maximum Drain Current Vs. Case Temperature

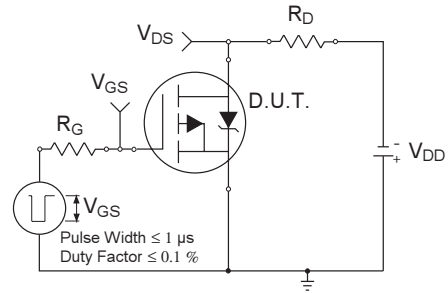


Fig 10a. Switching Time Test Circuit

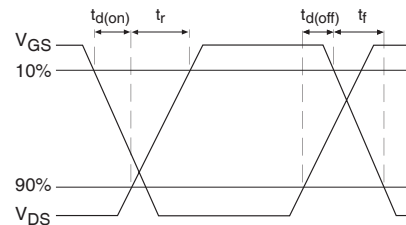


Fig 10b. Switching Time Waveforms

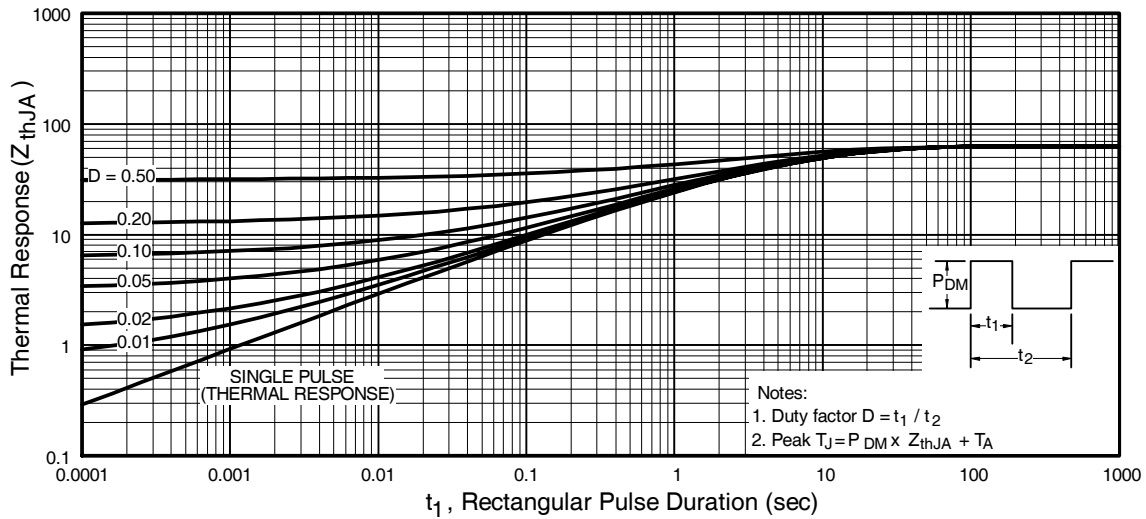


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

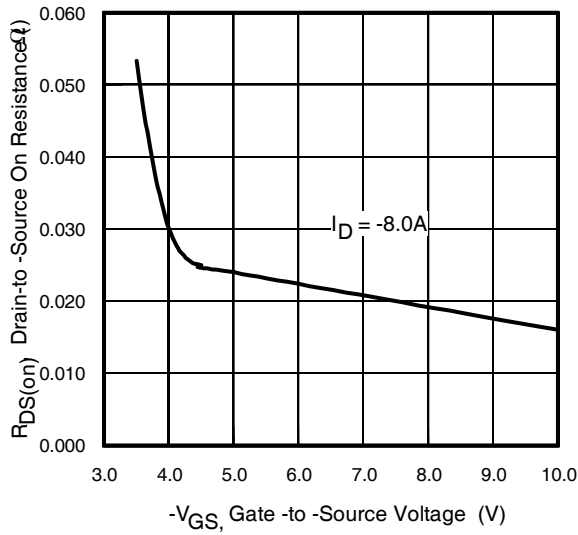


Fig 12. Typical On-Resistance Vs. Gate Voltage

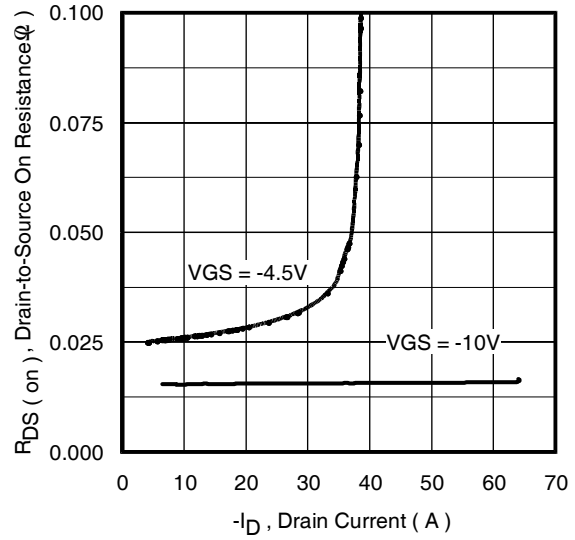


Fig 13. Typical On-Resistance Vs. Drain Current

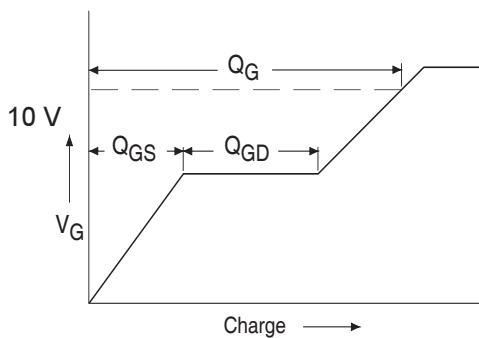


Fig 14a. Basic Gate Charge Waveform

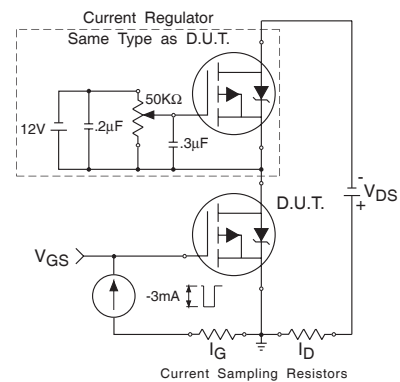
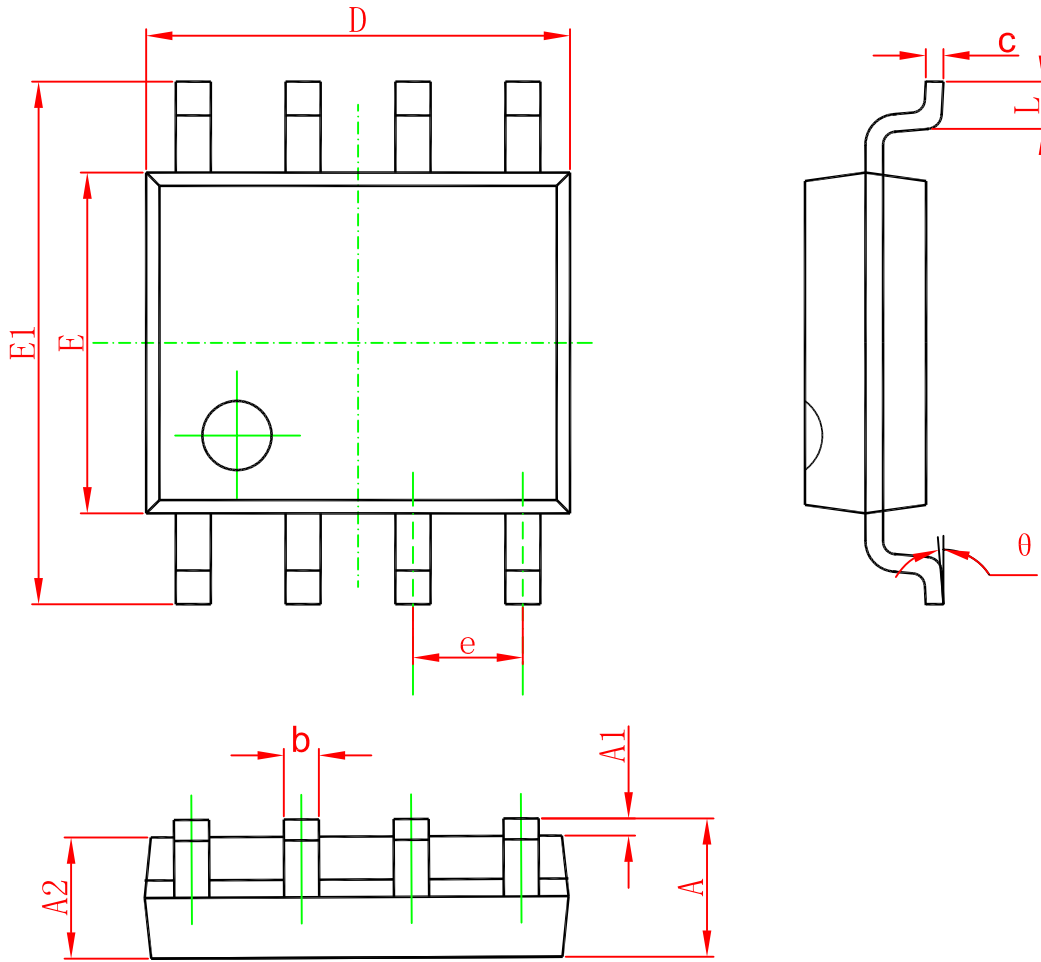


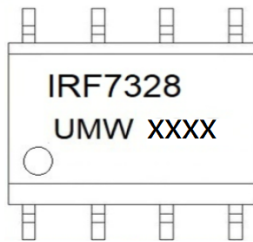
Fig 14b. Gate Charge Test Circuit

SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode
UMW IRF7328TR	SOP-8	3000	Tape and reel