



UG25N45

Preliminary

NPN SILICON TRANSISTOR

N-CHANNEL INSULATED GATE BIPOLAR TRANSISTOR

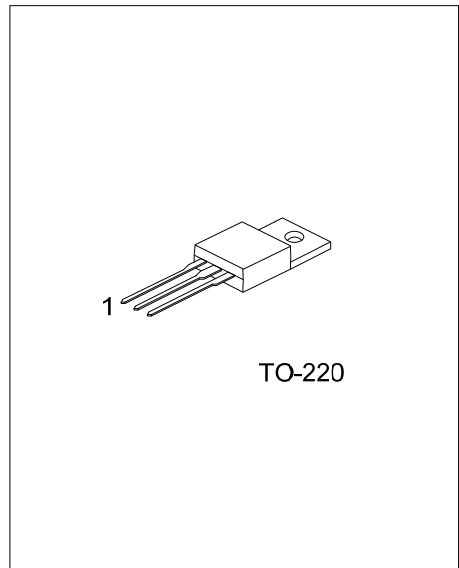
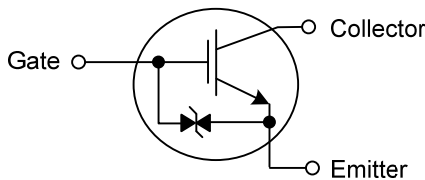
■ DESCRIPTION

UTC **UG25N45** is an N-channel NPN transistor. It can be used in strobe flash applications

■ FEATURES

- * Very high input impedance
- * Very high pick current capability
- * Gate drive: 4.5V

■ SYMBOL



Lead-free: UG25N45L
Halogen-free: UG25N45G

■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
UG25N45-TA3-T	UG25N45L-TA3-T	UG25N45G-TA3-T	TO-220	G	C	E	Tube

<p>UG25N45L-TA3-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) T: Tube</p> <p>(2) TA3: TO-220</p> <p>(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V_{CEO}	450	V
Gate-Emitter Voltage	V_{GEO}	± 6	V
Pulsed Gate-Emitter Current	I_{GEP}	± 8	A
Pulsed Collector Current	I_{CP}	150	A
Power Dissipation @ $T_C=25^\circ\text{C}$	P_D	2.5	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-55 ~ +150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

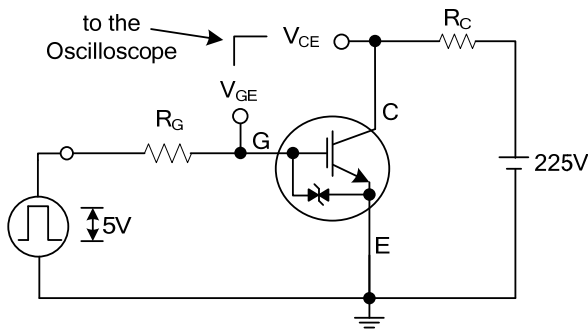
■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}			50	$^\circ\text{C/W}$

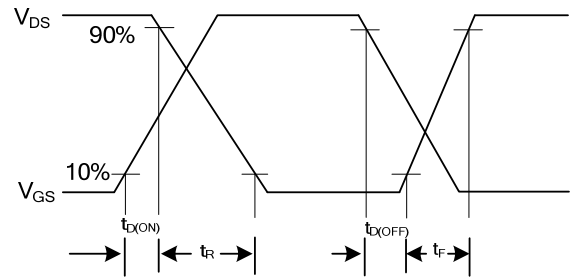
■ ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$V_{GE}=4.5\text{V}$, $I_{CP}=150\text{A}$ (Pulsed)		6	8	V
Collector-Emitter Leakage Current	I_{CES}	$V_{CE}=450\text{V}$, $V_{GE}=0\text{V}$			10	μA
Gate-Emitter Leakage Current	I_{GES}	$V_{GE}=\pm 6\text{V}$, $V_{CE}=0\text{V}$			10	
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GE(TH)}$	$V_{CE}=V_{GE}$, $I_C=250\mu\text{A}$	0.35		1.2	V
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{IES}	$V_{GE}=0\text{V}$, $V_{CE}=25\text{V}$, $f=1.0\text{MHz}$		2227		pF
Output Capacitance	C_{OES}			200		pF
Reverse Transfer Capacitance	C_{RES}			79		pF
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	$V_{CC}=225\text{V}$, $I_C=50\text{A}$, $R_G=25\Omega$, $V_{GE}=10\text{V}$		11.5		ns
Turn-On Rise Time	t_R			24.5		ns
Turn-Off Delay Time	$t_{D(OFF)}$			150		ns
Turn-Off Fall Time	t_F			3.3		ns
Total Gate Charge	Q_G	$V_{CE}=360\text{V}$, $V_{GE}=4.5\text{V}$, $I_C=50\text{A}$		64.5		nC
Gate-Emitter Charge	Q_{GE}			7		nC
Gate-Collector Charge	Q_{GC}			30		nC

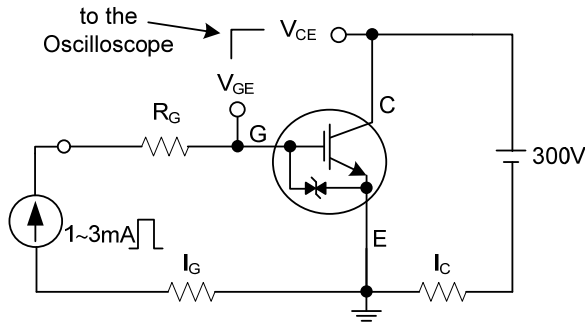
■ TYPICAL CHARACTERISTICS



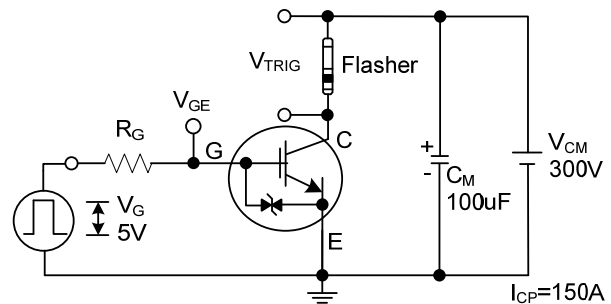
Switching Test Circuit



Switching Waveforms



Gate Charge Test Circuit



Application Test Circuit

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